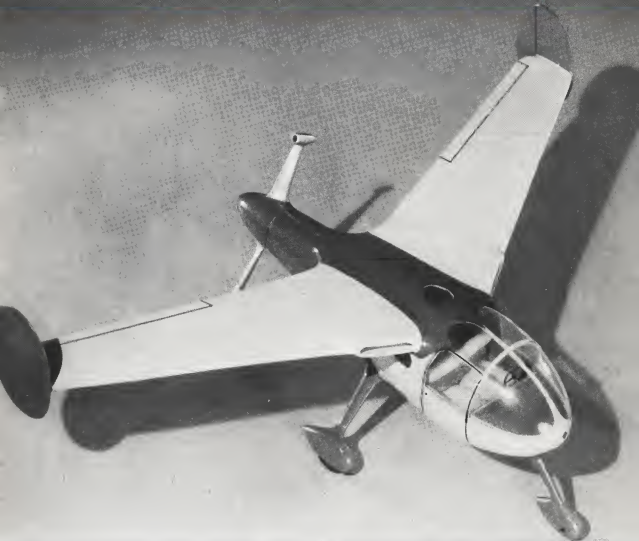


# Aviation News

McGRAW-HILL PUBLISHING COMPANY, INC.

DEC. 24, 1946



**Jet-Driven Propeller:** Basic research by the National Advisory Committee for Aeronautics in the field of jet-driven propellers may lead to industry development of personal planes similar to this NACA model. The theoretical design uses a pusher propeller without an engine. Driving force would be supplied by reaction from jet nozzles in the propeller tips. Air enters wing scoops, is compressed at propeller hub and by centrifugal action in the hollow propeller blade. (Story on Page 7.)

## Closer Collaboration On Engines And Planes Urged

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Summary for 1945 shows more made payments, and in greater volume, than ever before..Page 38

engineers and builders of  
oil hydraulic equipment

Since 1921



Vickers has been developing, improving and manufacturing oil hydraulic equipment since 1921.... Five years

before Lindbergh flew the Atlantic. In the 34 years that we have been building and applying hydraulic pumps and controls, our organization has accumulated a background of experience that has been invaluable in reaching the correct solution to many difficult problems in aircraft hydraulics.

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# Washington Observer



**SURPLUS TROUBLES**—Some industry quarters are not too happy about Surplus Administration S. J. Symington. They believe he is taking the wrong tack in repeated criticism of the Army and Navy for their slowness in releasing surplus. They think he should concentrate more on his disposal agencies, principally the Reconstruction Finance Corp., for the lag in disposal. They assert that when RFC can't dispose of what it has, Symington's plan for the Army and Navy to turn loose more surplus is not only ineffectual, but smacks of trying to make the services the goat for a bad situation that is getting worse.

**BAD NEWS FOR THE BRITISH**—Admiral Halsey, out of the Navy and chafing at inactivity, has an excellent chance to be named top man in the Maritime Commission to succeed Admiral Lead. Friends think this fighting steam working for U. S. flag development in the air and on the sea would set a fair pace for the rest of the world. While Air Transport Association officials categorically deny it, close Navy friends of Lead say he "hopes to get the steamship and air transport people together to cooperate and pool facilities as far as possible, cutting down costs, and giving the British a bloody nose for the business." The Lead appointment has important international angles still not generally appreciated. There will be much more news on this later.

**AIR FORCES ASSOCIATION**—The Secretary of State of New York has issued a charter as a membership corporation, without capital stock, to The Air Forces Association. Airlines are watching the progress of this group, which was formed to "preserve and foster the spirit of fellowship among former members of the AAF and to provide an organization through which its members may assist in the free

usual bonds of comradeship." The group plans to apply to Congress for a charter and make Washington its national headquarters. It is understood that the organization has the tentative blessing of the AAF. Its plans are still indefinite.

**LINDBERGH RETURNS**—Reappraisal of Charles A. Lindbergh in the public eye—as the Aero Club of Washington dinner—has earned considerable speculation. One report was that his excellent address was the first step toward building him up for important duties. If those sections of the public, press and officials which opposed his isolationist stand of some years ago show signs of warming to his new views, other events may be arranged. A most favorable impression was made when it was disclosed that Lindbergh had rendered valuable services—all without public notice—during the war and when it was reported that as a civilian he had engaged and accepted at least one Japanese plane.

**DIRIGIBLES**—Advocates of lighter-than-air craft for commercial purposes are becoming more active. Goodyear has prepared designs for both a base and giant airship approximately 950 ft. long, for any group wishing to operate a dirigible airline. Speakers espousing the dirigible's economy and appeal are becoming more frequent at aeronautical and engineering meetings.

**MUS31-MUS31**—Add to the end-of-the-war-did-see-being-the-end-of-secrecy notes the Aeronautical Board, key Army-Navy aviation coordinating organization ("Aviation News," Dec. 10), has issued an order that any officer or enlisted man who talks to the press about the Board will be court-martialed.



New two-place Eakleman Winglet at Baltimore (See Private Flying).



# Workhorse Power



Planes powered by the Wright Cyclone 18 carry more payload, at higher speed and lower cost, than any other aircraft in the world. The Wright Cyclone 18 is a source of workhorse power for planes with work to do.

**WRIGHT**  
AIRCRAFT ENGINES

WRIGHT AERONAUTICAL CORPORATION • PATTERSON, NEW JERSEY, U. S. A.

CURTIS WRIGHT

VOLUME 4 • NUMBER 22

**Aviation News**  
McGraw-Hill Publishing Co., Inc.

December 24, 1945

## Jet-Driven Props May Power Personal Planes of the Future

Three-ft. models of "pinwheel" application being tested at NACA research laboratory; net economy over conventional engines indicated despite some limitations.

By ALEXANDER MASURELY

The jet-driven propeller, whirling like a July 4th pinwheel, appears a likely prospect for the powerplant of the personal airplane of the future, replacing the conventional engine and propeller.

Engineers at the Cleveland engine research laboratory of the National Advisory Committee for Aeronautics are testing small model propellers about 3 ft. in diameter which obtain their driving force not from an engine shaft but from reaction produced by hot gases discharged from nozzles at the propeller tips.

Progress—Still in the preliminary analysis stage, the jet-driven propeller has progressed considerably at the Cleveland NACA laboratory since AVIATION NEWS first reported on the project (August 13, 1945).

NACA is studying the new method of propulsion as a basic research problem, to test its utility, without any specific commercial application. However, some of the engineers have envisioned possible

designs to illustrate its utilization.

▶ **Savings**—It is believed the new propeller would be particularly useful for lightness because of its inherent advantages: high weight, simplicity, and annual operation cost economy, and that planes powered by the jet-propeller may expand the potential of civil flying well beyond what might reasonably be expected with conventional powerplants.

Several arrangements of the jet-propeller are being studied, although the same general principle is involved in all.

▶ **One scheme** draws air in at the propeller hub, and compresses it by the centrifugal action during the air's passage out through the hollow blades toward the tips. Fuel is injected in small combustion chambers near the tips and the mixture is ignited. The rapidly expanding hot gases push out through the propeller-tip nozzles, which are set at a tangent to the blades. This produces a reaction force which turns the propeller.

▶ **Another more complex scheme** uses a compressor at the propeller hub, to give a first compression to the air which is brought in from nozzles at the leading edges of the blade's wings. The air is further compressed by the centrifugal action as it flows out through the blades. This supercharging effect substantially improves the cycle efficiency and lowers specific fuel consumption. This arrangement would be especially suitable for a pusher-type installation as shown in accompanying illustrations.

▶ **A third arrangement** would use small ram jet engines at the propeller tips, with the compression obtained solely by the ram effect, and the combustion accomplished at the tips. This arrangement would draw in air through the leading edges of the propeller.

▶ **Basic Form**—In its most simple form the jet-driven propeller consists of one rotating part with a turbine, and would need only a fuel pump and starter for maintenance. Like other jet-propulsion systems in their present stage of development, it would have a high fuel consumption and a reduced range as compared with a conventional engine-propeller powerplant. However, it would use low-grade cheap fuel.

NACA engineers have made theoretical calculations, based on the most pessimistic assumptions, which indicate the jet-propeller



**Possible Pusher Version of Jet-Propeller Plane:** Two views of a model prepared by NACA engineers to illustrate the possible application of the jet-driven propeller to personal planes, show a tailless plane,

which somewhat resembles the early Waterman Aerobee, with air scoop in the wing leading edge to feed air into the propeller. A pusher with twin turbofans could be used equally well.



**Jet-Propeller Design:** Jet-driven propellers like those already under test at the NACA engine laboratory at Cleveland, Ohio, offer interesting possibilities to replace conventional engine-propeller combinations in personal planes. Another NACA suggested design for the new type powerplant, is this more conventional tail-wing monoplane resembling the Breeze, with a tractor jet-driven propeller.

would consume three times as much fuel and would provide only two-thirds the range for a given light airplane, as would a conventional powerplant. This is despite the increased fuel capacity which would result from the lightness of the jet-propeller over the conventional powerplant.

**Net Economy—**Nevertheless, it is believed the actual operating cost of the jet-propeller would be lower, because of cheaper fuel, lower first cost, lower lubricating cost and simplified maintenance. And it is generally expected throughout the field of jet propulsion that further research will result in substantially lower fuel consumption.

Basically the idea is not new, but its application becomes increasingly interesting with the rapid progress now being made in other forms of jet propulsion. The fact that high speeds are necessary for jet propulsion efficiency, and that these may be obtained at the propeller tips without hurting the entire aircraft through the air at near-some velocity makes the propeller principle especially interesting.

**Efficiency—**Efficiency of the jet-propeller drops off rapidly as the rotational speed is decreased, and NACA engineers believe the most efficient operation will be with a constant high rotational speed, with the aircraft speed governed by changing the propeller pitch.

The investigations of the jet-propeller principle are being con-

ducted principally by Abe Silverstein, chief of wind tunnel and flight division, and the twin-brother research team of John and Newell Sinden.

Results of their findings will be made available to the public, the military services and the aviation industry for possible applications to various specific planes. It is expected that the study, still in its preliminary stage, will continue for considerable time until it is definitely shown whether or not the jet-propeller is practicable as an airplane power plant, and what additional research might be necessary to make it successful.

## RFC Confusion

Indicative of the official confusion surrounding surplus plant disposal is the Columbus, Ohio, plant operated by Curtiss-Wright in wartime and which C-W now plans to make its permanent headquarters.

The plant does not appear on the RFC list of plants either sold or under negotiation. Reason: the "Army from the plant Nov. 29 as negotiations have been suspended." RFC insists that Westinghouse, and Sears, Roebuck & Co. are vying with C-W for the plant. The fact is that C-W still is in Army work there and, when that is ended, has first chance at the plant, and has moved all its equipment, including most of its personnel there from Buffalo

## AAF Acts to Cut Rise in Accidents

Planes of the Army's Continental Air Force are undergoing "shakedown" inspections on fields all over the country in an effort to curb the rise of accidents.

About 20,000 aircraft are involved in this program. During the rapid demobilization of the Army, the AAF is losing large numbers of experienced aircraft maintenance and flying personnel daily. In many cases operations have been carried on with pilots and mechanics of lower experience levels.

**Key Men Lost—**Key men, such as converted pilots, wear chiefs, expert mechanics and maintenance specialists have been among the first to be discharged. This situation has been reflected in the increase of the aircraft accident rate.

During the fourth quarter of 1945, the peak period of air activity, there were 39 accidents per 100,000 flying hours in the continental United States. During August, September, October (records for November not yet complete) the peak periods of demobilization, the accident rate has climbed to 47 per 100,000 flying hours.

**AAF Anxious—**Gen. H. H. Arnold, in a recent speech at the National Press Club in Washington, made mention of the effect of rapid demobilization on the Air Force and said the demands being made almost daily by the public and Congress for this demobilization.

His serious concern in the air force.

The number of aircraft in operation has been reduced to meet the reduction in the number of skilled mechanics, and some planes have been placed in temporary storage even though they were airworthy. If there were 15 aircraft on a field with sufficient personnel to maintain only ten, five aircraft were placed in storage.

**Directive—**A directive from the headquarters of Maj. Gen. St. Clair Street, CAF Commanding General, ordered his commanders of the Continental Air Force to hold, at the earliest possible practicable date, a mechanical "shakedown" inspection performed on all aircraft assigned. Especially selected inspection crews will handle the project.

The new order, however, in no way changes existing regulations for the routine and periodic inspections of AAF planes.

## Dr. Cox Asks Closer Collaboration On Engine and Plane Designing

British jet expert, speaking at annual Wright lecture, says development of powerplants is far ahead of aerodynamic science; urges shelving of larger reciprocating motors.

Development of powerplants is ahead of aerodynamic development, and it is still in uncertainty whether the unorthodox designs possible with jet-propelled planes and currently being promoted are a good sign of the future, in the opinion of Dr. Harold Roscoe Cox, chairman and managing director of Power Jets Ltd.

Dr. Cox sees a need for closer coordination between plane de-

signs and engine design, the world's record speed craft, the Meteor, has a service life of about 100 hours, with overhaul. However, it has run 600 hours on a test run, with a change of these valves at 250 to 300 hours.

**Reciprocating Engines—**He said he saw no serious obstacle to continued development of jet propulsion and that he believed it "very ill-advised" for engine manufacturers to protect an industry of reciprocating engines for large planes.

British research on piston engines is diminishing rapidly, he declared, expressing the opinion that light planes inevitably are going to be powered by jets, with light planes probably the last to adopt that form of power. Only reciprocating engine research necessary now, he believes, is that on engines for small planes.

It is difficult to evaluate the relative merits of the jet propeller and gas turbine, the propeller and gas turbine and the ducted fan type, Dr. Cox said in his lecture, but at the news conference he made some general statements.

**Prop-jets** can be expected to provide, currently, 10,000 horsepower at 450 mph at 36,000 ft.

Pure jet economy in fuel consumption does not begin until



Dr. Harold Roscoe Cox

signs and engine designs. New operating conditions made possible by jet propulsion call for design changes to accommodate very high speeds, he told the Institute of the Aeronautical Sciences last week in the North Wright Brothers Lecture, which commemorated the 45th anniversary of the first flight.

**Competition—**Vice-president of Britain's Royal Aeronautical Society, and one of the most noted authorities on jet propulsion and gas turbines, Dr. Cox addressed the Institute on "British Aircraft Gas Turbines."

In comparing the British and American development with that of the Germans, he stated that while Germany was ahead in production of operational gas turbine aircraft, the Luftwaffe took delivery on engines that would not have been acceptable to the Allies because of short running life and unreliability.

Before the lecture, Dr. Cox told

## Funds Refused

The Senate Appropriations Committee refused to take a \$1,200,000 allocation for research planned by the Civil Aeronautics Administration under the first delivery program bill, in referring the measure out last week, thus ruling out the possibility that the enactment of an airport construction program for several months to come.

In requesting the allocation, the President had pointed out that planning the airport program, modernized in legislation which has been cleared by both House and Senate, will require several months, and that to expedite the execution of the program planning funds should be made available now.

Meanwhile, Congressional opposition to a large-scale airport program, in view of the availability of surplus Army and Navy funds, appears to be mounting. Critics seem doubtful as to the ultimate outcome of the McCarran-Lee legislation.

aircraft have reached speeds of approximately 800 mph.

There is no reason why planes powered with gas turbines should not have longer ranges than piston engines. This is particularly true of the prop-jet which has lower fuel consumption than the pure jet.

## Charles L. Howard Dies

Charles L. Howard, vice-president of Hawthorne Flying Service, died recently at home in Charleston, S. C. He was the father of Beverly E. Howard, president of Hawthorne and aviation pioneer.



WORLD'S LARGEST AMPHIBIAN:

New view of Glenn L. Martin's XPBM-3, largest amphibious airplane ever built, after it made its first test flight (Aviation News, Dec. 17).

## Loss of XB-42 Not Expected To Affect Production of DC-8

No changes in design of plane or powerplants anticipated, crash is attributed indirectly to high demands made on ship's hydraulic system by military operations.

AAP's loss of the unorthodox XB-42 "Microaster" bomber in an accident near Washington's Bolling Field is not expected to affect plans to produce the civilian transport version, the Douglas DC-8. Neither are any design changes indicated in either aircraft or engine as a result of the accident. Evidence last week indicated it was due to circumstances peculiar to Army operation.

While the report of the official AAP investigating board was tentatively scheduled for late last week, preliminary information from various sources gave this picture of the occurrence:

**► Trouble.**—The AAP had been having trouble with the unusually complicated hydraulic system, in addition, the engines had just had a complete major plug change. The pilot, Lt. Col. E. J. Assani, an AAP test pilot since stationed at Wright Field, took the plane up to check both engines and hydraulic system. On the take-off, there was difficulty in retracting the landing gear. At 5,000 ft. the engines checked O.K. Coming down, the plane was cleared to land and was in the approach, but the nose wheel came down only halfway and stuck there, and the main wheels would not leave the tarmac.

## Air Museum Studied

Establishment of a National Air Museum for the display of all types of aircraft used by the Army and Navy and in commercial operations from the time of the Wright Brothers flight to the present day is being considered by leaders of the aviation industry.

The project is understood to have the support of Gen. Arnold and other retired AAP officers. The opinions and views of airline and aircraft manufacturers are being solicited on the merits of such a museum is now being sought looking toward immediate action.

Assani, to offset the drag of the half-retracted nose wheel, increased power and pulled up to 3,448 ft., at the same time switching to the emergency hydraulic system to operate the landing gear. In his concentration on the hydraulic system, he overlooked opening the engine cooling flaps. The engine, had been closed for the landing. Subjected to an unusual strain, the emergency hydraulic motor began to smoke. Noticing this, Assani switched the hydraulic motor off. At that time, the left engine quit, followed quickly by the right engine. Assani and two other occupants of the plane parachuted to safety.

**► Cause.**—Informed opinion leans to the belief that the power failure was due to the engine overheating because the cooling flaps were not opened during the time when the engines were operating at high speed. It is pointed out that the Allison engines are duplicates of those that functioned in combat operations of two-engine P-51's all during the war, with no record of simultaneous failure of both engines.

Indirectly, the cause was the hydraulic system. Because the XB-42 was a military aircraft, its hydraulic system had to operate, in addition to the landing gear, the bomb bays, retractable wing guns, etc. The hydraulic system for the commercial DC-8 would be much simpler and conventional, obviating the difficulties experienced with the XB-42.

**► The cooling flaps** were designed by Douglas for either manual or automatic operation, because many pilots prefer the engines to run hot, some cold. In commercial use of the DC-8, the automatic, thermostatically-controlled system would presumably always be used in accordance with the manufacturer's recommendations.

## AAFTC To Move

Lt. Gen. Barton K. Young has announced the Army Air Forces Training Command will move headquarters on Jan. 1, from Fort Worth, Tex., to Riverside Field, Shreveport, La. Headquarters were at Fort Worth during most of the war. Strength of the headquarters now stands at approximately 475 officers, 405 enlisted men and 123 civilians.

Due to Gen. Young's recent ill health there is speculation that following the transfer he may retire from active duty.

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## Congress Relents On Research Funds

Army and Navy aviation research funds fared better in final action on the first appropriation session, bill than was indicated earlier during Congressional consideration of the measure.

In the bill as sent to the President last week, the Navy's Bureau of Aeronautics was authorized \$148,000,000 for research until the end of the fiscal year, and AAP research was granted \$250,000,000. The Navy had in the full amount requested for \$11,000,000 more than recommended by the Bureau of the Budget and originally allocated by the House. The AAP fund is \$45,000,000 short of recommended appropriation, but \$45,000,000 more than the amount originally allocated by the Bureau of the Budget and the House.

**► Retrospect.**—The recession measure leaves both departments with 1948 fiscal year working capital approximately 50 percent of the appropriations provided the two branches last July, when the 1948 fiscal year budgets were enacted.

## Consolidated XB-36 May Be Flown Soon

The bombing plane on which the AAP is basing its current statements on the possibility of intercontinental air warfare—the XB-36—soon will be ready for test flights. It was indicated last week. Built by Consolidated-Vultee Aircraft Corp., it is the military prototype of the civil transport Model 37, which is designed to carry 204 passengers.

With a wingspread of 300 ft., length of 183 ft., and approximately 20,000 hp, the XB-36 is planned to dwarf every other aircraft in performance as well as size.

**► Range.**—Its designed gross weight is in excess of 350,000 lbs. and its operating radius is 5,000 miles, according to Gen. Arnold who recently emphasized that that meant "5,000 out and 5,000 back" and AAP's own report states that with which, flying a north polar route, it could reach any part of the industrial world from a North American base.

Almost as radical an innovation in large aircraft as the XB-42 "Microaster," the XB-36 is powered by six piston engines in the trailing edges of the wing. According to Air Force magazine, the engines are Pratt & Whitney radial engines of 3,450 horsepower each, developing 3,450 combat horsepower.

**► Size.**—The large figures gave some idea of the huge size of the XB-36: circular fuselage 124 ft. in diameter; radius 48 ft. from tip of wing to ground; wheels (two single main wheels and a nose wheel) 110 in. in diameter, tires weighing 1,500 lbs. each. The crew totals 17.

As a contrast, the B-36, largest bomber now in use, has a span of 141 ft., length of 98 ft., weighs 133,000 lbs. and has an operating radius of 1,390 miles.

## Orders Helicopter

Bob Trader, Pittsburgh aviation parts supplier, has placed an order with Sikorsky Development Corp. for a four-place helicopter, for delivery sometime next spring. Trader said he wanted to study the use of a helicopter and expected eventually to handle helicopter parts in his supply business.



**Massive Bomber:** Sketch of the Consolidated Vultee XB-36, latest and largest AAP bomber which was reported last week as nearly ready for test flights. Power is supplied by six Pratt & Whitney Ram Major pusher-type engines each developing 3,450 combat horsepower.

## CAA Stresses Power Over Surplus Fields

Most important agency in the disposal of surplus airports now appears to be CAA, although the Reconstruction Finance Corp. has been designated the disposal agency. CAA release last week pointed out that department's sweeping authority in the airport disposal process.

This confirms previous opinion (AVIATION NEWS, Nov. 26) that RFC will not be the real boss over disposition of war-built landing facilities. While RFC is supposed to function in this matter with the help of a Surplus Airport Disposal Committee, CAA stresses that it does "well advise what portion of the property should be classified for airport use. . . CAA may report that a field does not fit into its "National Airport Plan" and should be sold for non-aviation uses."

**► Other Powers.**—In addition, CAA will recommend to whom a grant should be made, decide how much restoration as required in cases where the Government has leased fields with an agreement to restore the premises, and recommend issuance of interim permits for operation of airports pending final transfer of title.

When the subject of surplus air-

fields first came up months ago, CAA was thought to be the logical disposal agency, but declined the function as it would have meant adding legal and bookkeeping chores to an already understaffed department.

## 26 Surplus C-47's Sold By FLC Manila Office

More than \$800,000 worth of surplus C-47's have been sold by Manila central field representative of the Foreign Legislation Commission, the latter reports. Seventeen went to the Government of the Netherlands East Indies for \$340,000, five to Philippine Air Lines for \$324,000, and four to the Far Eastern Air Transport for \$80,000.

The Dutch probably will use the planes to repatriate prisoners liberated by American veterans in Japanese-held areas. Six Commansome says Sales to Philippine Air Lines, which expects to be operating regularly by Jan. 1, are expected to be of value in rebuilding the backbone of the airline.

**► Pre-War Lines.**—Far Eastern Air Transport and Philippine are the two commercial lines that operated in the Western Pacific before Japan invaded the Philippines. The former has been operating two trips daily to Panay since Nov. 15. Both lost all their equipment during the war.



**Designed for Peace:** The Navy's new search and patrol plane built by Lockheed. Its range is more than 5,000 miles, its speed is excess of 395 mph. It is powered with Wright engines.

## New Lockheed P2V Sets Navy Precedent

5,000-mile search and patrol plane is first land craft conceived and built for that purpose originally.

First Navy landplane conceived and built from the start strictly as a search and patrol plane is Lockheed's just announced P2V, a two-engine craft with advanced design and engineering which give it the carrying load and range of such four-engine planes as the B-17 and the B-24.

The plane is powered by two R-3350-9 Wright Cyclone engines, turning out a total of 4,800 hp.

**► Data**—It has a range of 3,500 miles with full load and more than 5,000 miles with bombs bay tanks. It is a midwing monoplane with a wing span of 100 ft., overall length of 79 ft. 6 in., overall height of 28 ft. 6 in. and gross weight of 34,000 lbs. Power loading is 16.1 lbs. per horsepower with maximum gross weight. Wing loading is 50 lbs. per square foot with maximum overload. The plane has a tricycle landing gear. The wing surface is 1,930 sq ft., airframe 56 sq. ft., elevators 19.3 sq. ft. and tailer 33.4 sq. ft.

Lockheed reports the plane can fly nonstop observation missions of more than 3,000 miles, sufficient to fly from Pearl Harbor to New



York in one hop, from Tokyo to Seattle without refueling; that it can perform equally well at high or low altitudes, skimming the ocean on search and rescue missions or fly more than four miles high for accurate photographic and radar mapping. Its speed is in excess of 390 mph.

**► Armament**—Various combinations of bombs, torpedoes, rockets and depth charges can be carried. It can fire 24 five-in. high velocity aircraft rockets from underwing launchers—twice as many as any patrol plane has carried previously.

The plane can be transformed instantly—in event of surprise attack or unexpected upsurge—into an attack bomber with its versatile bomb bay fitted for atomic bombs, two 2,150-lb. aerial torpedoes, four of the new 11.5-inch "Tiny Tim" aerial rockets, 16 500-lb. bombs, eight 1,000 pounders or four 2,500

pounders or twelve 325-lb. depth charges.

**► Cannon**—Six 20-mm. cannon fixed in the nose give the P2V unprecedented forward firing power. It also has twin 30 caliber machine guns in the top turret and the power tail turret to cover all angles.

Lockheed developed the P2V to fit specifications set by the Navy prior to the end of the war. The first P2V already has been tested extensively at the Lockheed facilities at Burbank and additional planes from Lockheed's contract for more than 100 production models will be delivered soon.

In pointing out that the P2V is the first land-based plane ever designed for the Navy for the specific job of patrol, they noted that the Lockheed PV-1 Ventura and the PV-2 Harpoon were modifications of the B-24 Army bomber, and the PB4Y-1 Navy Liberator and the PB4Y-2 Privateer were based on the B-24.

## Lindbergh Urges World Government

If we are able to prevent the future misuse of power based on aircraft and atomic energy, Charles A. Lindbergh told the Aero Club of Washington last week, it "will mark a greater epoch in human relations than their invention marked in science."

In his first public address in four years, Lindbergh addressed a world organization backed by military power and led by Western peoples who developed modern science.

**► Morality needed**—He said he pleaded for a strong military force only because he believed the alternative to war. Accompanying power, he added, there must be a return to morality in the "integrity, humanity and compassion that are lacking all over this post-war world."

"A world organization to have permanent influence, must wield power that is guided not by the desire for revenge, not by the intent to exploit or enslave, but by the qualities represented in Christian ideals," Lindbergh said. "To those who say that such ideals are impractical, let us point out the failure of the Hitlerian regime. The philosophy of Christ may have been too intangible for the Nazi government to understand, but the rubble of Berlin is a sufficiently tangible result of their failure."

## Industry Holds Back On Taking U. S. Plants On Long-Term Basis

Majority of companies proceeding slowly, waiting for settlement of military procurement policies; RFC deals in their total only \$33,178,770 of original \$3,000,000,000 goal.

By WILLIAM KROGER

Until procurement policies of the Army and Navy are settled and definite orders in sight, the aircraft industry is proceeding very slowly to acquire on a long-term basis plants built by Government in wartime.

While 13 companies are leasing for short periods, generally month-to-month or on a 30-day notice basis, plants they operated during the war, only six have committed themselves to purchase or long-term leases. The "interim leases" have been arranged to afford manufacturers time to complete contracts.

**► No New Sales**—Illustrating the extreme lag in disposing of aircraft plants, the latest report of the Reconstruction Finance Corp. detailing transactions to Nov. 26 shows no new final sales of plants since the previous report of Sept. 1 (AERONAUTICS NEWS, Oct. 3). Two sales have been negotiated, but not consummated, five plants have been leased, and tentative lease agreements have been concluded for four plants.

Since the RFC report, however, two sales have been consummated,

that of the General Motors engine plants plant at Melrose Park, Ill., to International Harvester Co., and the Curtiss-Wright plant at Cheektowatch, N. Y., to Westinghouse (see Production).

**► Two to Leases**—Of the 13 new sales negotiated, only two have been in the wartime leasor: the Aeronautical Products, Inc. facility at Washington Court House, Ohio, which cost \$500,348, and was sold for \$219,632; and the Thompson Aircraft Products plant at Euclid, Ohio, which cost \$7,416,271 and was sold for \$3,068,008. Aeronautical Products had leased for a short period one of two plants, before buying the smaller.

There has been tentative approval given to leases by Kinner Motors on its plant at Glendale, Calif., which cost \$626,000 to build, and by Wright Aeronautical on its Wood Ridge, N. J., facility which cost originally \$21,974,700.

Including the two aircraft plants previously sold to aircraft firms, RFC deals in date involving consummated use of plants by wartime lessees have amounted to \$23,178,770 of an original \$3,000,000,000.

## Northrop Net Sales

Total \$86,413,350

Northrop Aircraft reported consolidated net sales of \$86,413,350 for the year ended July 31. Interest earned amounted to \$84,627.85, and sundry other income totaled \$30,286.24, bringing the total income from sales and other sources to \$185,326,894.23.

The company paid its president, J. K. Northrop, a salary of \$13,000 for the fiscal year and a similar salary was paid to LaMoore T. Cohn, chairman of the board and general manager. Gage H. Irving, vice-president and assistant general manager was paid \$12,000.

The report filed with the Securities and Exchange Commission showed that manufacturing and other costs applicable to operations, administrative and general expenses, together with interest expense amounted to \$64,746,167.28, leaving a profit of \$2,362,566.95 before taxes of \$1,614,482.84. This left the sum of \$147,501.31 of profit transferred to surplus.



## MARS INTERIOR:

Arranged as a Navy transport, the interior of the Martin Mars flying boat provides seats two abreast on each side of a wide aisle, indicating the craft's use. On the right deck (right, below) looking aft from the cockpit, are the navigator's desk and radio desk, flight engineer's desk and even bunks. The Mars has several cargo holds like the one at right.



## Pusher-type Fighter Perfected by Japs

420-mph. outless craft had 2,100-hp. engine, most powerful jet developed by enemy.

The Japanese had perfected and were preparing to start production of a pusher-type fighter when the war ended.

Staff Sergeant Paul C. Sturges, a Marine Corps correspondent, reports that patrols from the 38th Marines found the revolutionary new model in an aircraft factory near Fukushu, Japan. The test model, damaged in a typhoon, now is being rebuilt and will be shipped to the United States.

**Speedy**—Records found in the factory indicated the plane, known to the Japs as the 27W1, or Shiden, had completed two satisfactory test flights. On the second one, the record reports, it was

stocked at 420 mph. at over 29,000 ft.

In addition to embodying the pusher principle, the plane was found to contain numerous other innovations. Sturges reported that it had the most powerful engine yet produced by the Japs, a 2,100-hp model designed for this plane by Mitsubishi. It is believed to be the first plane successfully to use a six-bladed propeller. Its armament included two 30 mm. cannon.

**Specifications**—Aeronautical engineers with the Technical Air Intelligence team which examined the plane said it had an unusually long propeller shaft, small dihedral angle in the wings and a nose wheel which retracts forward. Horizontal stabilizers are set in the normal position but are unusually wide, vertical fins are placed in the wings. Pilot visibility, as in most Jap aircraft, is poor, the canopy streamlining is poor, the fuselage and leaving the plane

blinded for an attack from the rear. Dimensions as reported by Sturges include an overall length of 31.663 ft., wing span of 36.463 ft., height from ground to top of canopy 11.663 ft. and width of landing gear 14.961 ft. Rudder fins are set in the wings 12.467 ft. from the center of the fuselage.

Members of the TAI team said they still are looking for a second pusher-type Japs are known to have been test flying.

## Peacetime AAF Plans Reviewed

Reorganization shows AAF peacetime plans for an adequate air force for defense call for:

• 400,035 men of which 30,000 would be officers or warrant officers.

• Seven combat groups in addition to training and research and development establishments.

Groups would be broken down into 24 for very heavy bombers, 33 for lighters, five for medium and light bombers, one for transport and troop carrier, and five for tactical reconnaissance.

In order to support this force there would be needed about 5,000 combat type planes, 2,000 training type, 300 transport for Air Transport Command, and 700 additional for utility purposes, making a total of 8,200. Turnover of aircraft would be about 25 percent replacements a year or approximately a production of 4,999 planes a year for the Army.

**National Guard**—Air National Guard has been estimated at some 30-odd air units with some larger states supporting a wing headquarters and all states supporting at least two squadrons. The major part of the National Guard would be fighter and fighter bomber, for defense and for coordination with the ground Guard.

A rough estimate of aircraft needed to supply the Air Reserve and the Air National Guard was placed at an additional 8,000. This total of active and reserve of 14,200 does not include reserve aircraft that must be provided. Overall reserve would be approximately 8,700 aircraft.

Reduction of manpower figure from last reports from Gen. Arnold were explained by the fact that squadrons in peacetime could be operated at 80 percent of peak needs instead of 100 percent.

## PRIVATE FLYING

## Aerona Plant Conveyor Line Paces Post-War Lightplane Field

Middletown, Ohio, factory utilizes production methods which hold key to lowering of unit costs and reaching mass market; system follows reconversion survey.

Announcement by Aerona Aircraft Corp. of installation of mechanized conveyor production line at the Middletown, Ohio, plant is another step toward the modern production methods which the lightplane industry must employ, if it hopes to achieve sufficient production volume to lower costs and reach a mass market.

John and Carl Friedlander, heads of Aerona, believe their floor-type and overhead conveyors are the first in operation in the post-war lightplane industry. It is known that Luscombe used an overhead lightplane conveyor line before the war, but the new Luscombe plant at Dallas does not yet have them. Presumably all the big plane manufacturers which get in to small plane production will use conveyors and it is likely that many of the smaller companies will follow.

**Details**—The Aerona conveyor system has been designed as a result of a production and reconversion study last summer. The possibility of as many as three lines was investigated but finally a

single line was chosen for the two first production planes, the Champman (standard) and the Chief (side-by-side). The problem was worked out with scale models. The fact that the Champman and Chief have interchangeable wings, tail surfaces, and many other parts, facilitated the production of both planes on a single line.

The first conveyor line, 1,235-ft. long, is tried to produce 20 airplanes a day, and carries 45 fuselages in a continuous line, indicating it takes a little more than two working days for a plane to move from first to final station. The system feeds 25 parts of wings into the main line after they have been assembled on a separate line. The company is planning addition of another 630-ft. conveyor and some additional facilities which are expected to increase daily production figures well beyond the 20-a-day mark.

**Fuselage**—A floor-type conveyor begins in the welding department in the southeast corner of the plant and runs 200 ft. in a straight line taking the fuselage through frame

assembly and covering.

The fuselages, and complete sets of tail surfaces and landing gear, are removed from the floor conveyor and transferred to an overhead conveyor which goes to the deep room. A third hand-operated conveyor (to prevent fire hazard) takes the fuselage through the deep room, after which it is returned to the second mechanized conveyor which carries it to final assembly. The line changes in elevators so that employees always have proper working heights for installations.

**Wings**—The wing structures are completed in four stations on a separate line, after which they are inspected, covered and transferred to a hand-operated conveyor for dipping and painting. Right and left sections travel in a frame with each pair of wings. A fifth conveyor carries wings and ailerons through sub-assembly to final assembly where they are attached to the fuselages at the foot and strut fittings.

The sixth conveyor, not yet completed, will be an overhead-type carrying stabilizers, elevators and ailerons from the welding assembly through cleaning and priming tanks, to covering. The remainder of the sixth conveyor will bring stored parts to fuselage sub-assembly line bins, and will return fuselage carriers from the first conveyor to the welding department.

**Rearrangement**—The moving line setup necessitated relocating some of the fabricating and processing departments in order to move parts on the shortest route. Engine storage space was placed at right angles to the final assembly line, and the engines are carried by



**Jap Pusher Fighter:** Two new photos of the pusher-type fighter airplane which had been successfully tested by the Japs and which was ready for production at the end of the war.



**Lightplane Conveyor Belt:** Aerona Aircraft Corp. believes it has the first mechanized conveyor line for post-war personal plane production in the industry at its Middletown, Ohio, plant. A floor-type con-

veyor carries the planes through early stages and overhead conveyors are used for dipping and final assembly. Line is geared for 20-planes-a-day production.

door type doors. Electric hoists lift them to the engine mounts for installation.

The dope room uses hot dope method of applying finishes to get better coverage and durability with minimum sanding, instead of the older cold dope method. A wood shop which fabricates spars, struts, bulkheads and other wood parts, is located directly over the humidity controlled wood storage room. The wood shop dips its completed parts in a wood primer giving complete coverage, a definite advantage over the former method of painting wood parts after installation.

The hanging line gives three advantages cited by the designers: interchangeable parts, fitting each assembly in the same way, which are equally valuable as replacement parts in field service, good inspection procedure to detect faults in fabricating parts, and ease of workmen for single operators, which they perform repeatedly, giving uniform results in assembly.

## Eschelman Winglet Flown in Baltimore

Conventional two-place personal plane is successor to designer's earlier experiments in flying wing types.

First test flights of Chester L. Eschelman's Winglet, two-place personal plane were made last week at Baltimore Municipal Airport. The new ship is of more conventional configuration than the Baltimore designer's earlier experimental flying wing aircraft.

Eschelman expects the first production model to be completed within four months after a CAA type certificate is assured. It will be produced by the Wolfe & Mann Manufacturing Co., of Baltimore.

**Performance**—The Winglet is a low-wing monoplane of rather conventional design, fabric-covered metal construction, powered with a 160-hp. Franklin engine, and is equipped with an electric starter and full instrumentation including radio. It is expected to sell for between \$2,500 and \$3,000.

M. R. Gribble, test pilot, reported the plane "handles beautifully," at the conclusion of the first brief flights.

The plane is designed to cruise at 120 mph, with a 131-mph. top speed, climb at 867 fpm. and have a 14,450-ft. service ceiling. It is



New Eschelman Flamer: Two-place low-wing Eschelman Winglet, is more conventional design than previous developments of Chester L. Eschelman, Baltimore engineer. Note similarity of chord back of the wing. The 160-hp. plane is due to be in production next April, will be sold in the \$2,500-\$3,000 class complete with starter, instruments, radio.

designed to take off without flaps in 14.2 seconds after a ground run of less than 600 ft. and to land at 40 mph. with flaps and at 60 mph. without flaps.

**Winglet Task**—Most recent feature of the Winglet is its tubular wingtip, which also serves as fuel tank. The tank is filled at either wingtip. The wingtip of either winglet, is made of chrome molybdenum steel, has a tapered wall thickness and contains baffles as a precaution against sudden shift of load. Eschelman has applied for a patent on the new tank. The tank arrangement makes space for a roomier fuselage and an unusually large cockpit for a two-place personal plane, the designer says.

**Earlier Types**—The plane is designed primarily as a "pilot's plane" which may be licensed for all types of aerobics, so it has no staggered or simplified control features.

The Winglet is a "little brother" to the four-place Eschelman flying wing, which the designer and his associates have been projecting since 1942. Eschelman's first design was shaped like a flattened teardrop, and was known variously as the "flying boulder," "wing-less wonder" and "flying carpet." It made numerous test flights at Legion Field and Municipal Airport in 1942. It crashed and burned when the landing gear buckled and friction from a sled slowed an ed tank.

**Eschelman**—Eschelman has temporarily delayed this test in favor of the Winglet. Pending its certification he is obtaining funds to tool for its production by sale of stock. The plane may be the

first personal-type airplane ever manufactured in quantity production in Baltimore.

The 20-year-old designer and former Martin engineer had his pilot's license revoked after an unauthorized weaving flight in 1939 in a rented plane, which ended in a crash landing in the ocean about 125 miles east of Boston. He was perked up by a lawyer, and permed inquiries about his designation with the answer he had intended "trying to learn." He has never had his license reinstated by CAA but Gribble and his other associates do the necessary test flying. He returned to Baltimore after the sea flight, rented a building and went to work on his small plane design.

## Two AA Pilots Planning Airparks in Memphis Area

Two American Airlines pilots have announced plans for building and operating private flying airparks at Memphis, Tenn.

L. P. Butler plans a 125-acre airport with modernistic administration building, hangar, traction building, lunchroom and display rooms, and three large hangars. Lyle Martin plans a 108-acre airport with three 1,600-ft. runways, and a two-story administration building with observation deck, clubhouse and display room. He expects to build ten individual T-hangers at the beginning, to be supplemented by others as needed.

The plans are subject to approval of the Shelby County Justice Board. Both airparks are located conveniently close in to the city.

## Airpark Problems Outlined By AIA

Bulletin especially for veterans discusses requirements for setting up open private field facilities stressed.

Problems of setting up an airpark are discussed in a recent bulletin of the Aircraft Industries Association directed particularly at returning veterans who are thinking of such an enterprise. Suggested as procedures are:

- Find out if your community plans a municipal airport. If so give consideration to the competition involved and to whether there will be enough business for both, before developing your own airpark further. Best arrangement might be to lease the municipal airpark, but if you prefer to operate your own you have the major problems of financing and selecting a site.

- Make certain you are qualified to be an airport owner-manager. Veteran pilots have advantages over non-fliers, and the best combination is a pilot-former crew chief. A pilot and his former crew chief would handle the maintenance and servicing and flying operations while a third partner might be a businessman skilled in accounting, salesmanship and management. If it is a one-man show, that man should have considerable knowledge of all these things.

- Factors in selecting the site include accessibility to town, potential customers, public transportation between site and town, local construction costs, drainage and leveling problems, and making a choice between high property costs like town, and lower costs further out.

- Before buying the land, make a thorough investigation of ownership, including all rights, zoning restrictions in the area, character of old, obstacles to nearby property, possible damage to adjacent property by drainage from your property, and the availability of city telephone, power, water and sewage lines.

- Development of the facilities in the future, and possibilities of feeder airline service should be studied in order that the airpark be designed for future expansion.
- Consider future use of the airport for private airports, so capital may come from yourself, relatives, friends or a bank. Annual required for development varies

greatly in individual cases.

- Most income will come from a flying school, charter flying, and nightwing tours, all requiring use of one or more airplanes which you will need. Financing on new aircraft comparable to that arranged by automobile credit companies may be expected.
- Oil companies will furnish and install tanks, pumps and handling facilities for oil and gas as part of their agreement with you. Prestigious hangars, small administration buildings and shop buildings are available or soon will be. Your regular service to visiting airmen must include fuel, servicing, storage and minor repairs.
- Non-flying dollars (from coin vending machines, telephone booths, parking lot, magazine stand, lunchroom, aircraft parts, accessories and supplies, swimming pool, tennis courts, etc.) may provide much additional revenue.
- Establishment of airport developments depends on the manufacturer. A list of manufacturers may be obtained from the Personal Aircraft Council of the Aircraft Industries Association, 610 Riverside Bldg., Washington, D. C.
- Government representatives in your area will give you advice, whether you wish to operate an entire airpark or to restrict your enterprise to one phase, such as an airplane sales and flying service.

You are entitled freely to their services and it is their job to answer questions. Regional CAA offices are in New York, Atlanta, Chicago, Kansas City, P. Worth, Santa Monica, and Seattle.

Objection to the airport site was filed on the last day of the 30 days posting required by the state, which made the public hearing necessary.

## Policy On Airports Set in Maryland

Maryland State Aviation Commission recently ruled that it would not refuse approval for development of an airport on any proper site unless it was shown "beyond a reasonable doubt" that the proposed airport would "endanger or be detrimental to the health, safety or welfare" of nearby residents.

Charles H. Buck, chairman, adopted this position in a hearing on application of Annapolis Airport, Inc. for designation of a 200-acre airport site two miles south of Annapolis as suitable for a Class II airport. Buck said the commission would not refuse adverse testimony or evidence against an airport site, unless it had a direct bearing on the question of a possible adverse or harmful effect to the safety, health or welfare of the community.

**Plans**—Arthur H. Peil, Steiner, president of the corporation, said plans call for two 3,800- to 5,000-ft. runways, an administration building, service hangar, fully-equipped shop, individual T-hangers, and ultimately a seaplane ramp and lounge on Back Creek, which feeds into Chesapeake Bay. He proposed to operate a ground school, a flying school and a charter service.



BAYLEY T-HANGAR:

"Jack-knife" doors which open to both ends making the full 30-ft. frontage available for untrapped, are the most unusual feature of the all-metal Bayley prefabricated T-hangar, announced by the William Bayley Co., Springfield, Ohio. Designed to be erected on a concrete block foundation with anchor bolts holding the frame, the hangar is completed by slipping the corrugated sheet steel and roof to the frame members. The doors travel on tracks which are welded in the structure. The hangar, 24 ft. deep, is designed for meeting groups of the same together. The company also offers a layout of buildings in a row, which will include office and shop space.

## 2,000 Planes Due to Join in Tour

Advance enrollment for last year's annual flight to Florida indicates 40 percent increase over last year's previous year.

At least 2,000 private planes are expected to participate in the first post-war lightplane tour to Florida, beginning Dec. 25, Gulf Oil Corp., the tour sponsor, estimates.

Advance enrollment represents a 40 percent increase over the largest pre-war mass flight. Four routes to Miami, Fla., along with free gasoline and oil will be provided.

► **Route 1 (Eastern)**—New York City, Amherst, Pa., Greenbelt, Md. (with an adjoining spur from Look Haven, Penn., and New Kingston, Pa.), Richmond, Va., Warrenton, N. C., Fayetteville, N. C., Camden, N. C. (with an adjoining spur from Winston-Salem, N. C. and Charlotte, N. C.); Orangeburg, S. C., Ridgeland, S. C., Savannah, Ga., Jacksonville, Fla., Orlando, Fla., Ft. Pierce, Fla.; Palm Beach, Fla., and Miami.

► **Route 2 (Midwestern)**—Cleveland, Bucyrus, Springfield and Cincinnati, Ohio; Louisville, Ky. (with an adjoining route from Lansing, Mich.; Sikea, Mich.; Keosauqua, Ind.; and Indianapolis, Ind.); Bowling Green, Ky.; Nashville, Tenn.; Chattanooga, Tenn.; Atlanta, Ga.; Mason, Ga.; Albany, Ga.; Tallahassee, Fla.; Gainesville, Fla.; Orlando, Fla.; Ft. Pierce, Palm Beach and Miami.

► **Route 3 (Southwestern)**—Ardmore, Okla.; Dallas, Tex. (with a spur from Ft. Worth, Tex.); Marshall, Tex.; Shawneeport, La.; Monroe, La.; Jackson, Miss.; Meridian, Miss.; Montgomery, Ala. (with a spur from Montgomery, Tenn.; Tupelo, Miss.; and Birmingham, Ala.); Albany, Ga.; Tallahassee, Fla.; Gainesville, Orlando, Ft. Pierce, Palm Beach and Miami.

► **Route 4 (Southern)**—Austin, Tex.; Bryan, Tex.; Houston, Tex.; Beaumont, Tex.; Lafayette, La.; New Orleans, La. (for alternate route thru Bogalusa, La.); Mobile, Ala.; DeFuniak Springs, Fla.; Tallahassee, Gainesville, Orlando, Ft. Pierce, Palm Beach and Miami.

The tour runs from Dec. 26 to Jan. 26, and one time during that period plane owners who have enrolled, may fly planes of 125 hp or less, to and from Miami on their

## Briefing For Private Flying

**CAA IN FLAT PITCH**—If you hear a flat pitch propeller screaming through the atmosphere around your hometown airport, chances are it will be a CAA inspector's plane. For CAA, advance of less noise at airports, has just fallen heir to 100 Vultee BT-13's trainers from Army surplus. And the BT-13's reportedly are as noisy as any plane you might happen to meet. The noisy plane will certainly deliver from any surprise visits which the inspectors might like to make. But CAA is issuing a directive to the inspectors who fly them, to operate the planes "as quietly as possible" and not to use flat pitch any longer than is absolutely necessary. It might be a good use for any experimental funds which CAA gets, to set up a project on quieting down the BT-13's. CAA has received a total of 324 surplus planes, including C-47s, DC-3s, and bi-motored and single-engine Beechcrafts.

**MOUNTAIN HAZARDS**—Utah State Aeronautics Director Joseph Bergen has recommended to CAA Administrator T. P. Wright, that more rigid requirements for pilot experience be put into effect when the private pilot is flying in rugged mountain country. Bergen's recommendations, prompted by a reported increase in Utah accidents involving inexperienced pilots, would require each private pilot to file a flight plan at his takeoff field, and notify his home field of arrival at his destination by telephone or telegram. He also asks that all CAA communications stations be directed to accept civilian contact flight plans, a service discontinued during the war; that private pilots be restricted to flights within 50 miles of home airports until they have completed a 400-mile cross-country flight with an instructor and a 200-mile solo cross-country flight designated by a CAA inspector, and filed a satisfactory flight plan; that personal navigation be returned as a subject for the private pilot written examination, and that CAA "raise pilot standards" before issuing licenses to students who expect to fly in mountain country. Bergen cited one case of a Utah private flyer who was lost in bad-weathering weather on a mountain peak for 36 hours before his plane was reported overdue.

**ORDERS FOR BRITISH "PROCTORS"**—Orders have been received for the Percival "Proctor", three-four seat British-built lightplane from eight other countries. The first plane, powered with a de Havilland "Gipsy Queen" six-cylinder engine, of approximately 200 hp, has been accepted by the Portuguese embassy, and a contract for 20 "Proctors" has been placed by the Danish Government. The plane was used for communication and personnel transport by the RAF in wartime. A civilian version of the plane, is called the "Perrol" is now being planned. Percival Aircraft Ltd., also plans a twin-engined, all-metal lightplane, and a high-wing all-metal plane for executive transport and charter flying.

**MESQUITE AUCTION**—More than 50 used planes were sold at a "fly-meet" auction held at Tucson City, Mo., operated recently, by Ray Brummett, airport operator. The sale was supervised like a typical Midwest livestock auction, by an auctioneer who had no previous aviation experience, but the planes were sold quickly at fair prices, Brummett reported. He intends to have another auction as soon as sufficient planes are available.

**GLIDING AT SAN DIEGO**—Glider enthusiasts in the San Diego area have reserved their meadows flying at Gibbs Field, after the successful halt of glider flights during wartime. John Robinson, San Diego welder who won a national soaring championship at Elverta, N. Y., and was one of the Army's glider pilot instructors, is instructing at the field.

—Alexander McCurdy

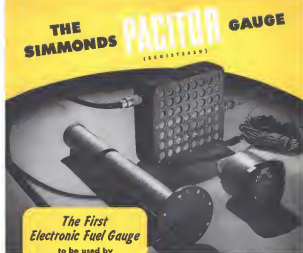
own schedule, taking advantage of the free fuel and oil.

Many of the pilot tourists will visit the All-American Air Maneuvers at Miami, Jan. 4, 5 and

6. Invitations to the tour, applications, and questions of eligibility are being handled by the 13 Rightplane builders who are handling the tour with Gulf.

# THE PACIFIER GAUGE

(REGISTERED)



**The First Electronic Fuel Gauge to be used by AIRLINES IN THE UNITED STATES**

The installation of Simmonds Pacifier Fuel Gauges on a fleet of 50 Douglas C-54 transports recently acquired by American Airlines, marks the introduction of an advanced electronic fuel measuring system to domestic airline operation. Simultaneously, these instruments have been specified for the giant Douglas DC-4's being built for commercial use.

The basic principle of the Pacifier Gauge makes use

of a change of the electrical capacity of a condenser (tank unit) when the dielectric changes from liquid to air, these changes being measured electronically and recorded on the cockpit indicator. A modified sending, rather than one dependent only on a liquid level, is achieved despite changes in flight attitude or temperature. The Pacifier Gauge has no moving parts except the indicator pointer in the dial, thus requiring a minimum of servicing. It gives greater accuracy and reliability than float-type or conventional gauges, and is easily adapted to any type of aircraft. For illustrated literature or further information, write the Simmonds office nearest you.

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## New School Offers "Certified" Training

National standardization of methods is aim of center set up by Casey Jones in New York.

Opening of a "certified aviation center," at 5 West 46th St., New York, operated by Eastern Air Navigation Service and the New York Aviation Corp., is part of a national plan to standardize training, sales and service in aviation instruction and merchandise.

Additional centers are expected to be established at other spots throughout the United States, and the Academy of Aeronautics (headed by C. S. (Casey) Jones, in New York, is offering a 360-hour (three-month) course to train personnel for the operation of these centers.

**Purpose** — Main purpose of the New York center is to provide a sales center for various aviation accessories, textbooks, periodicals, and reference volumes and to offer elementary and advanced ground school lectures courses for fledgling and veteran pilots. A Link trainer is available for instrument flight training.

Among definite ground school training courses at the center are instrument flight practice for pilots with instrument ratings, instrument instruction for experienced pilots who lack instrument ratings, simple aviation ground school courses for beginning student pilots, prior to flight, aviation courses for persons not interested in flying, but desiring a general knowledge of aviation.

**Requirements** — Requirements for students to be trained to operate the centers in other locations include: graduate of approved high

school, 21 years old, pilot certificate with instrument rating or substantial experience in Link trainer maintenance or operation or aircraft radio maintenance, service record in World War II in AAF or Naval Air Service, leadership qualities and teaching experience will receive preference.

Financial backing, to be used in establishing the center, is required. Approximately 10 students will be chosen from the applicants in each state. The first class begins Feb. 3, and is limited to 50 enrollees, with subsequent classes beginning the first Monday of each month thereafter. Dr. Roland H. Spaulding is in charge of instruction. Prospective students may apply to Certified Aviation Centers, Academy of Aeronautics Bldg., La Guardia Field, New York.

## Mechanical Starter Offered By McDowell

Lever in cockpit spins propeller by cable, accepted as standard on Chief, Arm says.

A mechanical propeller-opening starter, actuated by a 56-lb. pull on a lever in the cockpit and weighing only 12 lb. installed, is being offered by lightplane manufacturers by the McDowell Manufacturing Co., Pittsburgh.

Company representatives saw the starter now in considerably improved over the original model developed several years ago and is adaptable to any of the smaller planes with engines up to 100 hp.

**Accepted** — The starter already has been accepted as standard equipment on the new Aeromax Chief, McDowell representatives



**McDowell Starter** Sketch shows operating principle of the McDowell safety starter, now in a revised and improved form. The pilot pulls on the starter lever, actuating a cable which spins the propeller.

say, and is being examined by other lightplane manufacturers for possible installation. A list price of \$85.00 is quoted on the equipment, which includes starter lever, cable, starter mechanism in a ring-shaped housing on the propeller shaft and a new impulse magnet in exchange for the plane's old magnet, if the latter is in good condition. The company recommends the special impulse magnet for more positive starting.

Advantages of the mechanical starter cited include:

- Starts engine with dead battery.
- Starts plane if engine quits in midair.

Weight is considerably less than usual starter, generates installation.

Starter has been approved for safety and performance by CAA, AAF, Macmillan Command, and Navy Bureau of Aeronautics.

The starter also has applications for use on water skis, ice boats, motor boats, aircraft engines in classrooms, and any other place where positive starting is needed with safety, lightweight and economy, the manufacturers say.

## Stran-Steel Hangar Price

A price list on the Stran-Steel T-hangar, complete with sliding front doors, lists the hangar at \$1,895 FOB the Great Lakes Steel Corp. plant at Ecorse, Mich. The hangar (Aviation News, Dec. 10) may be fitted with a corner office or storage room with door and window for \$186. Built in nests of several units, the prices range from \$1,895 for two to \$21,054 for 25. Row swing doors on the hangars will be added for \$54 per door.

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a super tire at a sane price!"**

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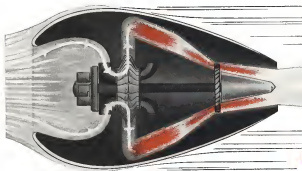


## VOYAGER FARM PLANE:

Adaptation of the Stran-Steel Voyager 150 as a farm plane for hauling light cargo, is made possible by removing the tug back seats to haul supplies or equipment. The four-place Voyager can take off in 250 ft. or less and land in 225 ft. and is built to fly a useful load of 944 lb. The company also is studying application of the plane for forest patrol observation and dropping parachutist fire fighters.

# G.E. POWERS THE "Shooting Star"

WORLD'S MOST POWERFUL AIRCRAFT  
ENGINE FORESHADOWS AN AGE  
OF FASTER FLIGHT



For all its simplicity, the aircraft gas turbine was one of the toughest engineering jobs G.E. ever tackled. There were metallurgical problems posed by the terrific temperature extremes and mechanical stresses encountered. Combustion had to be confined in one thousandth of the volume per ft. cu. required by a power-plant boiler. A fuel system had to be devised that could give uniform performance from sea level to the stratosphere. And the job had to be done fast.

The speed with which G.E. brought the gas turbine to its present state of development is one of the great achievements of this war. It testifies both to the experience G.E. gained in developing the now-famous turbo-supercharger and to an indomitable will to make this phenomenal new kind of power succeed.



## AIRCRAFT GAS TURBINES

*For War... the most powerful propulsion*  
*For Peace... the most promising*



As the Army Air Forces' newly conceived P-80 streaks through the skies, there flies with her the message of an unprecedented era of aerial progress. For here is not only jet propulsion, there, as a working reality, is the dream of thousands of engineers—a practical, efficient aircraft gas turbine.

Designed and put into production by General Electric engineers, the revolutionary power plant of the Lockheed P-80 "Shooting Star" has demonstrated far-reaching advantages for fighter planes. It has the highest power output of any engine in the air. It is much lighter than conventional reciprocating engines of less power. It is amazingly simple. It can operate on a wide range of fuels. It eliminates delay for engine warm-up.

Of particular significance, G-E aircraft gas turbines virtually eliminate vibration and noise.

### HORIZONS UNLIMITED

Pure jet propulsion is now the ideal power for fighter

planes. Our major effort, so far, has been devoted to perfecting the gas turbine for this use. However, practical-minded G-E engineers envision almost limitless use of aircraft gas turbines on transport, cargo, and private planes of the future, for propeller drive as well as jet propulsion. Here, they will give you combinations of speed plus range that you have scarcely dared to hope for.



The principle of the gas turbine places no such limits on power as do reciprocating engines. Moreover, they will give long life and their best fuel economy even when operating at a high percentage of their maximum power.

As the progress of aircraft gas-turbine propulsion continues, you will find G-E pioneering many of the basic developments which will make planes fly faster and farther—which will bring new comfort and safety to our travel. Apparatus Department, General Electric Company, Schenectady 5, N. Y.

Buy all the BONDS you can —and keep all you buy

GENERAL  ELECTRIC

## Service Rate Manual Issued By Aeronca

A new full-size manual for repair work has just been issued to aircraft operators by Aeronca Aircraft Corp., Middletown, Ohio. The manual makes it possible for the operator to check the time spent on any repair job, multiply the time required by his hourly rate and add his parts price estimate to arrive at an accurate charge.

Lathrop Nelson, Aeronca service manager, said the new manual was prepared to give the operator and the lightplane owner protection against inaccurate estimates. It is based on a month's study by company service crews at the Aeronca plant. They assembled and took down airplanes, making all types of changes and repairs, checking time and parts costs, and incorporated their findings in the booklet. The study followed a survey of Aeronca dealers and distributors which revealed a wide variation in estimates on identical repair jobs.

**Revision.**—A section in the booklet is provided for any changes or corrections by operators. The manual will be revised periodically to accommodate new operators and suggestions from the field, as well as time studies on new models when they become available.

The initial manual covers Aeronca Models 88, 68, Tandem Trainer, Defender, Super Chief, L-2B, 604B and L-3C series. It is be-

lieved to be the first manual of its kind issued by a lightplane manufacturer.

Time and parts prices required for repairs and replacements are based on what field service stations should accomplish with average equipment and mechanics of average ability. The booklet is broken down into 10 major classifications, and prices are indexed in these groups. Examples are included.

## Development Planned

Two former Army flying instructors have taken a long-term lease on the former Abbot Field, near Warren Springs, in the Oakland, Calif. area and are developing it as a private flying airport. Plans call for an "aerodrome," individual hangars, a restaurant, and sales, rental and service facilities for private planes, with a total investment of approximately \$25,000 in improvements. The operators, Russell Frank, of San Leandro, and L. H. Simon, of Palo Alto, are leasing the field under the name "Private Pilots Air Service."

## Survey Shows Shortage Of Airports In Michigan

A survey conducted by the Michigan Department of Aeronautics indicates that every airport in the state is overcrowded, and that state airports must be doubled in number in the next five years to accommodate the increased num-

ber of planes which are being registered with the department.

Thomas E. Walsh, chairman of the State Aeronautics Commission, reported the state has less than 2½ airports per thousand square miles and warned that unless this is remedied by public and private enterprise it would prove a major deterrent to further development of aviation in Michigan.

## 6 Pilot Certificates Revoked By CAA

Pilot certificates of six airmen were revoked and five were suspended by the Civil Aeronautics Administration as a result of violations of the Civil Air Regulations. Boards of the auditors and consequent Board action follow.

### REVOCATIONS:

Robert Clarence Goff, commercial pilot, Los Angeles, in violation of Article 11, § 1, and while under the influence of intoxicating liquors, Goff did not use the instrument for the flight took off against a prohibited and prohibited wind speed. June 10, 1945. Aeronca violated CAA section 10.261. Certificate revoked.

Paul Francis Lane, student pilot, San Diego, in violation of Article 11, § 1, and while under the influence of intoxicating liquors, Lane did not use the instrument for the flight took off against a prohibited and prohibited wind speed. May 10, 1945. Aeronca violated CAA section 10.261. Certificate revoked.

John Monroe Goff, private pilot, San Diego, in violation of Article 11, § 1, and while under the influence of intoxicating liquors, Goff did not use the instrument for the flight took off against a prohibited and prohibited wind speed. May 10, 1945. Aeronca violated CAA section 10.261. Certificate revoked.

CAA also revoked the certificates of the following pilots for violations of the regulations, then violating CAA section 10.261: John William Goff, private pilot, San Diego; and Richard Randolph Alvord, private pilot, San Diego. June 10, 1945.

And Charles Charles Jr., San Francisco, and Harry Hume, San Francisco, were suspended for 10 days.

**SUSPENSIONS:**

James Lawrence Wilson, student pilot, San Diego, in violation of Article 11, § 1, and while under the influence of intoxicating liquors, Wilson did not use the instrument for the flight took off against a prohibited and prohibited wind speed. June 10, 1945. Aeronca violated CAA section 10.261. Certificate suspended for 10 days.

Robert John McWhorter, private pilot, San Diego, in violation of Article 11, § 1, and while under the influence of intoxicating liquors, McWhorter did not use the instrument for the flight took off against a prohibited and prohibited wind speed. June 10, 1945. Aeronca violated CAA section 10.261. Certificate suspended for 10 days.

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## PATHWAY TO EARTH... Everywhere

All over the world... from the mud-brick European fields to sun-baked airstrips in southern Burma... Federal Instrument Landing Systems are "bringing you in"... on the beam.

Bombers, pursuit ships, night-fighters, transports... American, Canadian, British, Russian... ships wearing all the colors of the Allies... coming in on this "pathway

to earth", day and night, through the toughest kinds of flying weather.

This is the instrument landing equipment that Federal developed over more than ten years of intensive research... and which has set the standard for aerial navigation equipment in all parts of the world.

For the coming "age of the air"... see Federal first for the finest in aerial navigation and communications equipment.



Federal Telephone and Radio Corporation



Newark 1, N. J.



## 44 PLANES FLY TO BREAKFAST:

Indifference of rumormongers in aerial private flying was the recent fly-in breakfast held at Tri-Cities Airport, Endicott, N. Y. The first event of its kind held in the Endicott area since the lifting of fuel restrictions, the breakfast was attended by some 71 pilots and passengers who arrived in 44 planes from 11 airports within 75 miles of the Tri-Cities airport, according to a report from Tri-Cities Area Club which sponsored the affair. The club plans a "bigger and better" breakfast flight next spring in conjunction with a lightplane show. Photo shows the breakfast flight planes lined up at the airport.

## Production Of Beech D18S In Full Swing At Wichita Plant

13 already have been delivered to various business firms; production of famous single-engine Model 18 is scheduled to be resumed soon.

Commercial production of executive-type Model D18S transports is in full swing at Beech Aircraft Corp., Wichita, Kans., with 13 already delivered to a variety of business firms. First deliveries were made earlier this month.

The D18S is a six- or seven-place civil version of the military transports and trainers, of which 5,174 were built for the Army and Navy. With two 450-hp. Pratt and Whitney Wasp, Jr., engines, it has a cruising speed of up to 300 mph and a range of six hours, depending on payload and power.

**Changes**—Most obvious outward change from the military craft is the redesigned landing gear. Softer in action, it smooths out imperfect landings and provides fast turning on rough, unprepared fields. Engine nacelles have been extended outward and flush riveting is used on wing leading edges and other areas to smooth out the flow of air and to improve landing qualities at slower speeds.

Cabin interiors have been re-

designed and business upholstery and trim, comfortable airline-type adjustable chairs provided. There are individual reading lamps and ash trays and full temperature control. A new instrument panel and changes in location of controls add to ease of pilot handling.

**Performance** — Manufacturer's recommended cruising speed is 3,000 ft. with 88 percent power is 150 mph, with gross weight of 3,500 lbs., 150 mph, with gross of 3,750 lbs. and 157 mph with gross of 3,600 lbs. Highest maximum speeds, achieved at 5,000 ft., for the respective weights are 220 mph, 225 mph, and 224 mph. Service ceilings for these weights are 20,500 ft., 19,000 ft., and 16,200 ft. Fuel consumption is 34.4 gallons per hour for all weights.

**Manufacturer** — Beech, which employed 14,000 during the war, now has 3,000 on its payroll, but employment is increasing as re-equipment progresses. Production soon will be resumed on the company's famous Model 17, five-place

## Jet Fuel Booster

Westinghouse has developed a motor to drive a booster fuel pump for a jet-engineled airplane which will be mounted in the fuel tank itself. The motor is made explosion-proof. The fuel, gasoline or kerosene, is circulated between an outer housing and the frame to keep the motor cool. The motor develops 2½ hp. at 1,800 rpm, but weighs less than 20 lb.

single engine biplane with reverse stagger.

Among business firms which have taken delivery on the Model D18S are: Tunkin Roller Bearing; Continental Can Co.; Burlington Mills; Lion Oil Co.; and Superior Oil Co.

## Direct Fuel Injection Used On Constellation

First civilian use of the Stromberg direct fuel injection system is on the Wright engines which power the Lockheed Constellation being put into service by TWA.

The fuel system was used to equip the engines on Boeing's B-28, but is having its first commercial application on the Constellation power plants. C. D. Menhart, sales manager, fuel metering division, Bendix Products division, Bendix Aviation Corp., explained that the system dispenses with the ordinary carburetor and substitutes small multi-cylinder gasoline pumps which force gasoline under pressure directly into each engine cylinder in proportion to the needs of the engine.

**Benefits** — The manufacturer claims another operation, greater power and fuel economy for the direct fuel injection. The operation of the system is fully automatic in changing the amount of fuel to suit requirements for different engine loads and for variations in air temperature and altitude.

## Propeller Limit Based

Approval has been given by the Canadian Department of Transport to the removal of the 12,600-hour service life limit on Trans-Canada Airlines propellers. Service life now becomes unlimited. However, following extensive tests, propeller overhaul limits have been extended from 900 to 1,600 hours.

**Breeze Flexible Tubing, Shielding, Conduit Fittings**

**BREEZE MARK**

Breeze Flexible Metal Tubing solves many a design and modification problem by providing easily installed ducts and vents for air conditioning, exhaust or dust collection. Produced in a variety of metals from a continuous strip, Breeze Tubing resists heat and corrosion and is available in a variety of shapes to fit structural considerations.

Breeze Flexible Shielding Conduit is made from similarly constructed tubing with the addition of a braided wire covering which acts as a shield preventing radiation or absorption of electrical interference. Double layers of braid are sometimes specified to provide complete isolation from ultra-high frequency interference. A variety of specially designed fittings meet every installation need.

If you are confronted with difficult tubing or shielding problems, call in a Breeze engineer for a complete analysis and recommendation.

Types listed, Partially  
Full Interlocked, Unshielded  
Full Interlocked, Partially



## JAPS FOLLOW GERMAN DESIGN:

Patterned after the German Me-163 jet interceptor, this Japanese Shumi jet plane was found in Japan by Navy Air Technical Intelligence Office. The Shumi is reported to be in the 200-hp. class and to climb at the rate of 1,500 ft. per second. It can fly only a few minutes because of high fuel consumption.

## SEC Summaries

### Transfers Of Stock

Dwight S. Wallace, Canada vice-president, sold 50,000 shares of common; other transactions listed.

Dwight S. Wallace, executive vice-president, treasurer and one of the principal stockholders of Canada Aircraft Co., has advised the Securities and Exchange Commission of the sale of 50,000 shares of the company's common stock in October, reducing his ownership to 13 shares.

An official summary of security transactions made public by the commission shows that Dwight S. Wallace, president, general manager and a principal stockholder of Canada, acquired 90,000 shares of the stock, increasing his holdings to 100,014 shares.

**Other Deals**—Alexander T. Price, president and general manager of North Aircraft Company, sold 3,000 shares of that common stock, leaving him a balance of 18,000 shares at the end of the month. Mr. Price also holds 200 shares of the 48 per cent preferred stock.

Edward E. Wilson, vice chairman of United Aircraft Corp. reported sale of 700 shares of the company's common stock, reducing his balance 100 shares at October 31.

Frederick C. Chiswick, vice president of Northrup Aircraft, Inc., reported the sale of 1,000 shares of the common stock which he owned jointly with his wife, leaving a balance of 400 shares in their portfolio. Chiswick, vice president, sold 1,000 shares, including his holdings to 1,000 shares. Chiswick, 20 shares vice president and treasurer, reported the sale of 300 shares of the common stock, which he held jointly with his wife, leaving 1,000 shares at the end of the month.

William H. Allen, an officer of Boeing Airplane Co., purchased 250 shares of the common stock, increasing his holdings to 750 shares.

R. M. Haveland, director and principal stockholder of Fairchild Aircraft Co., reported the sale of 10,000 shares of the common stock, leaving

him a balance of 25,000 shares. He also sold 700 shares of Fairchild Common and Fairchild Corp. common stock, reducing his ownership to 8,270 shares.

Edmund W. Price, treasurer of Grumman Aircraft Engineering Corp., reported the sale of 2,000 shares of the common stock, leaving him a balance of 5,000 shares, while L. A. Swartz, vice president, sold 200 shares, reducing his holdings to 7,000 shares.

Among the air transport companies, C. G. Adams, secretary and treasurer of United Aircraft, Inc., reported the sale of 100 shares of the common stock, reducing his holdings to 1,000 shares.

High Newell, director of Eastern Air Lines, Inc., increased his holdings to 100 shares of common stock through the purchase of 200 shares. John H. Pappas, vice president, reported the sale of 100 shares of the common stock to a trust through the company, leaving 3,000 shares. A. B. Kowalski, a director, sold 1,000 shares of common stock, reducing his holdings to 10,000 shares.

Thomas P. Pappas, senior regional sales manager for National Airlines, Inc., sold 50 shares of the common stock, representing the entire holdings in the company.

John C. Finkbeiner, vice president of Transcontinental & Western Air, Inc., and his entire holdings of the company's common stock, amounting to 150 shares.

Alvin C. Clark reported the acquisition of 10,000 shares of common stock of Northrup Aircraft, Inc., last August, bringing his holdings to 20,000 shares.

A September report filed by Benjamin M. Sklar, director of Avco Corp., shows he bought 1,000 shares of the common stock, increasing his holdings to 1,112 shares.

Thomas D. Neelands, Jr., director of North Aircraft Corp., purchased 400 shares of the common stock in September, giving him an ownership of 1,401 shares.

### General Electric Hangar Nearing Completion

Construction of General Electric's \$500,000 hangar-home for a new Flying Laboratory at Schenectady is scheduled for completion within a few weeks.

The all-concrete structure will be the site of development and test work on all types of jet, gas

turbine, radar and electronic equipment.

It will be large enough to house four B-29's, one B-34 and an aircraft, both loaned by the AAF for experimental purposes, already have arrived at the airport. Other craft, including a B-29, which will be converted for the flight-testing of new equipment, are expected on the project in the near future.

### C-W Factory Sale Accentuates Trend

Sale of the aircraft plant at Cheektowaga, N. Y., operated during the war by the Curtiss-Wright Corp. to the Westinghouse Corp. gives additional support to the long-held theory that few of the war-built aviation facilities would be continued in aeronautical production in peacetime.

This is the second large aviation plant disposed of recently to a non-aviation concern. International Harvester Co. has purchased the Melroe Puck, III, engine parts plant.

Price—Purchase of equipment and tools which are not included in the sale, the Cheektowaga factory cost more than \$10,000,000 in build. Westinghouse is paying \$20,000,000 for only the land and buildings, a much lower rate to original cost than has been obtained in sales of other large plants. Westinghouse plans to spend between \$100,000 and \$1,000,000 to adapt the facility to the manufacture of electric motors, and will employ 6,000 or more persons.

### New AAF Research Unit Has LeMay As Head

A new staff agency has been set up at AAF headquarters to coordinate all research in the field of military aviation between industry and AAF engineers with the intention of keeping Army aviation development progressively advanced in all fields of research.

Mr. Gen. Curtis E. LeMay will be in charge. In giving this assignment to Gen. LeMay, the Air Force has called on one of its most experienced development leaders who has an outstanding record of pioneering first with the 8th Air Force against Nazi targets and later as head of the 20th Air Force B-29 campaign against Japan.

## Superior Engineering . . . basis of Collins quality leadership



Above all, the Collins Radio Company is an engineering outfit. 44% of the organization's entire personnel are graduate engineers.

They came to Collins because the Collins progressiveness and quality standards are their own ideals, and brought with them successful experience in both radio and allied electronic fields. They are the nucleus of the organization, from management on through.

These men determine and uphold the character of Collins radio communication equipment from inception, through all stages of research, design, production, quality control, field test and field service.

Aviation can look with confidence to Collins for the best available performance in air borne and ground station radio communication equipment. We will welcome an opportunity to consult you regarding your requirements.

COLLINS RADIO COMPANY

Circle Eight, Inco

11 W. 42nd Street, New York 18, N. Y.

IN RADIO COMMUNICATIONS, IT'S . . .



New G-E Hangar: The structure at Schenectady, N. Y., will house aircraft to be used by General Electric for flight-testing new equipment.

## Air Procurement Trend Developing

Trend of military and naval procurement during the first four post-war months has set a rather definite pattern indicating with reasonable accuracy the companies which will do the bulk of military and naval aircraft work.

Signs now indicate that Boeing, North American, Lockheed, Grumman, Martin and Douglas will share largely in this procurement. This does not mean that other companies will not have military contracts, but those named, according to present indications, will get the big share. All performed efficiently during the war and the contracts they probably will receive means they will continue as efficient producers and can keep abreast or lead in research and development.

**Little Change**—There has been little change in naval and military procurement since the major initial V-J cutback which reduced procurement from some 4,000 a month. Some adjustments are due, with emphasis now on new bombers.

In the later stages of the war there was a trend toward utilizing the facilities of many small, but efficient, workshops, but these are fading little encouragement now in military and naval circles. It is true that some of these have considerable business on the books at the moment, but the tendency of the AAF and the Bureau of Aeronautics is to get some other large producer to take over the smaller companies, many with excellent engineering talent and plant, so that an efficient and economically sufficient facility can be kept intact.

## Piper Predicts Elimination Of Many Plane Concerns

Many of the more than 80 reported personal helicopter manufacturers and the more than 200 individuals or firms interested in personal plane projects will go out of business when their stockholders' money runs out, William T. Piper, president of the Piper Aircraft Corp., told the ADMA convention.

Improvement of lightplane engine reliability over pre-war engines, and the probability of construction of many small airports in the near future, were seen as the

most optimistic factors in the personal plane picture.

**Growth**—Pennsylvania, he reported, already has appropriated \$3,790,000 to put with funds from local governments in matching national airport funds. If the federal potential of this is realized, it will give Pennsylvania nearly \$11,000,000 to build airports, most of them of the small private plane variety. He described air marking as a shopage program, which will be needed only until there are enough airports available so that the pilot can land almost anywhere and find out where he is.

Emphasizing the need for small fields in great numbers he urged "let's get our foot in the door with lots of little cheap fields and then other people learn to fly, we'll get all the money we need."

## Firm Licensed to Handle Obsolete Douglas Parts

Douglas Aircraft Co. has granted an exclusive license to Aero Components, Inc., to manufacture and sell spare parts and assemblies for certain Douglas airplanes now considered obsolete.

Models covered by this license include: AAF Model C-33, a DC-2 type cargo plane; AAF Model C-36, a DC-3½ cargo plane; AAF Model C-37, a twin-engined bomber; available for conversion to executive-type transport; AAF Model A-24, a single-engined dive bomber (Navy Model SB2D); AAF Model A-33 series, a twin engine attack bomber.

**Particulars**—The need for spare parts for maintenance of these models of Douglas-designed planes has become apparent, Douglas officials said, by the many inquiries received from foreign and domestic airlines, individuals and foreign governments who have acquired the planes by purchase or lease.

Aero Components is located at Los Angeles Municipal Airport.

## Subzero Oil Developed

Development of silicon oils that flow at temperatures as low as 121 degrees below zero Fahrenheit is announced by the research laboratories of General Electric Co. The oils are suitable for use in aircraft hydraulic systems. The oils also retain effectiveness at temperatures up to 383 degrees above zero, showing little change in viscosity through the wide range of temperatures.

## Fairchild Sets Up Personal Planes Unit

Appointment of Harry M. McKay as head of the Personal Planes Division of Fairchild Engine & Airplane Corp. with headquarters in Dallas, Texas, has been announced by J. Carlton Ward, president.

The firm's F-24 four-place personal plane will be produced near Dallas under a subcontract with the Texas Engineering & Manufacturing Co. (AVIATION NEWS, Dec. 3).

**Sales**—Working with McKay will be Lee H. Smith, named head, and



McKay H. S. Smith, L. H. Smith

Robert H. Smith, sales promotion head. Louis Palmestock III, long supervisor of F-24 construction, will direct engineering and production.

Fairchild also announced appointment of 24 distributors for the F-24 and said more than 100 dealers have been selected. The distributors are:

Anderson Air Activities, Milwaukee; Budget Aviation Co., Birmingham, La.; Bode Air Service, Houston, Texas; Buck's Flight School, Chattanooga, Tenn.; Carter-Carr Flying Service, Albuquerque, N. M.; Benson Flying Service, Hagerstown, Md.; Hunter Flying Service, Cedar Rapids, Iowa; Ray Hyland School of Aeronautics, Rochester, N. Y.; Kansas City Flying Service & Air College, Inc., Kansas City, Mo.; Lynchburg Air Transport & Sales Corp., Lynchburg, Va.; Mid City Aircraft, Madison, Ohio; Pacific Aircraft Co., Fresno, and San Francisco, Calif.; Piedmont Aviation, Inc., Winston-Salem, N. C.; Portland Flying Service, Portland, Me.; St. Louis Flying Service, St. Louis; Bonser Aviation Services, Oklahoma City, Okla.; Tulsa-Schubert, Inc., Des Moines, Ill.; Ventrux Aviation Sales & Parts Co., South Bend, Ind.; Wallace Aircraft Co., Sarasota, Fla.; Wicks Aviation Co., Detroit; Lowery E. White, Telephoto, N. E.; E. W. Wiggins Airways, Inc., Newwood, Mass.

## quick turnover for airports



## ...SPARKED BY RECTOX AIRCRAFT ENGINE STARTERS

You turn 'em over and get 'em flying quick with easy-to-operate, portable Rectox engine starters.

These effective starters save aircraft batteries and offer five important advantages for modern airports.

1. **Mobility**—unit can be rolled quickly under plane wings, no interference with other service trucks and equipment.
2. **Safety**—low center of gravity prevents tipping.
3. **Low maintenance**—all parts easily accessible, frequent servicing unnecessary.
4. **Modern design**—streamlined for modern airports.
5. **Dependability**—proved by Rectox service records in leading airports.

Your nearest Westinghouse office can give you all the facts on Rectox engine starter performance and the benefits it offers you. Or write Westinghouse Electric Corporation, P. O. Box 358, Pittsburgh 30, Pennsylvania. Do it now.

201919

## ENGINE STARTERS



Westinghouse  
MADE IN U.S.A. (EXPORT VERSIONS)



# Morris Named Assistant To President Of NAL

May John L. Morris, executive secretary of the Washington, N. C., Chamber of Commerce, will become special assistant to the president of National Airlines. Morris formerly was with the Macon, Ga., Chamber of Commerce and the Macon Chamber of Commerce.

Herbert C. Dolan, traffic manager for Pan American's Latin American division, will become vice-president in charge of traffic for NAL. H. B. Parker, Jr., will remain in his present position as senior vice-president of NAL.

Col. Robert L. Turner (photo), recently released from the Air Transport Command, has rejoined Eastern Airlines and has been appointed northern division manager. He will be assigned to New York. Turner handled the traffic program at the Cairo and Yalta conferences. He joined Eastern in 1935 and was assigned to the operations office in Atlanta. He has served in several other capacities for the airline.



R. J. Kermack has been named West Coast district manager of the aviation products division of the Goodyear Tire and Rubber Co.

Charles J. De Bever (photo) has resigned his parachute specialist of the Civil Aeronautics Administration to become a sales supervisor of General Textile Mills, Inc., New York. In 1948 De Bever joined the government as a civilian employee of the Army Air Force. During the war he worked as a safety consultant, supervising the packing, inspection and repair of parachutes in Army depots all over the country.

L. L. Condré, Chase Wagon, USNR, former Massachusetts motorist traffic manager for Mid-Continent Airlines, has been named Kansas City district traffic manager.



L. L. Condré, Gilbert Smith, just released from active duty, has been elected vice-president in charge of traffic of Republic Airlines. Smith was vice-president and treasurer of the W. Harry Airlines, Inc., which represented Scripps Lane, Inc., and others.

George D. Vassil has been named factory sales representative at Kansas City for Surface Construction Corp. He was formerly an assistant director for the Spruce Aircraft Co.'s school of mechanics at Tulsa.

John T. Carlson (photo) has been appointed manager of a newly-created PCA new business bureau to give a thorough coverage of the airline's expanding system. Carlson, a former newspaperman, served in the Army for the past 31 months and was discharged with the rank of lieutenant colonel.

Richard H. Bailey, who has been public relations director for the Fairchild, Glenn & Instrument Corp., has joined G. M. Bushnell Co., New York advertising agency, to handle public relations. Bailey will continue to do public relations for Fairchild and its two subsidiaries, Fairchild Aerial Surveys, Inc., and Photogrammetric Instruments, Inc.

Phil Douglas Wood, Dallas district manager for Bonnell Airways, five years before joining the Air Transport Command in 1943, has returned to the airline in his former position.

Paul F. Gahan has been named chief industrial engineer for Cleveland operating divisions of Thompson Products, Inc., and Thompson Aircraft Products Co.

Philip Korman for three and a half years as assistant for Pan American Airways, has returned to private practice having formed a partnership with W. Stuart Thompson in an office in New York. Korman served



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George D. Vassil has been named factory sales representative at Kansas City for Surface Construction Corp. He was formerly an assistant director for the Spruce Aircraft Co.'s school of mechanics at Tulsa.

John T. Carlson (photo) has been appointed manager of a newly-created PCA new business bureau to give a thorough coverage of the airline's expanding system. Carlson, a former newspaperman, served in the Army for the past 31 months and was discharged with the rank of lieutenant colonel.

Richard H. Bailey, who has been public relations director for the Fairchild, Glenn & Instrument Corp., has joined G. M. Bushnell Co., New York advertising agency, to handle public relations. Bailey will continue to do public relations for Fairchild and its two subsidiaries, Fairchild Aerial Surveys, Inc., and Photogrammetric Instruments, Inc.

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TULSA, OKLAHOMA

## SPECIAL AIR SERVICES

CHARTER NON-SCHEDULED INTRASTATE

### Orlando Airlines Changes to Cessnas

Present plans call for addition of three Beechcrafts to Florida company's fleet.

Orlando Airlines has converted from single-engine ships to twin-engine Cessna transports and is augmenting its Orlando-Jacksonville and Orlando-Tallahassee operations with twice daily service from Orlando to St. Petersburg, Tampa, Sebring and Arcadia.

Thomas M. Gordon, president of the intrastate company based at Orlando, said present plans call for addition of three 35-passenger Beechcrafts about Jan. 15.

► **Plans**—These planes will make possible service on two new routes. One will connect Tallahassee and Miami via Lake City, Gainesville, Ocala, Leesburg, Orlando, Cocoa and West Palm Beach.

The other route will serve Jacksonville, Tampa and St. Petersburg via St. Augustine, Daytona Beach, Orlando, Lakeland, Sebring and Arcadia.

### Arizona Schedules Airline Control Test

Arizona's first annual aviation conference held recently in Tucson precipitated an open fight over control of a State-wide system of feeder airlines.

During the conference Arizona Airways, Inc., announced plans to start service soon between all major Arizona cities, but two other companies, C & G Airlines and Sky Harbor Air Service, lost no time in publicizing their intention to compete.

► **Legal Problem**—The fight's opening rounds posed the first serious legal problem the State has faced in regulation of its embryo air transportation system.

Airline Airways, either through direct application or purchase, already has or is seeking certificates of convenience and necessity from the Arizona Corporation Commission to set up scheduled passenger and freight services. C & G and

Sky Harbor already hold certificates to operate charter or taxi service anywhere within the State.

Perturbed, the Corporation Commission asked John L. Sullivan, Attorney General, to institute court action to determine the rights given under the charter and taxi service certificates.

### 50 Surplus Planes Sold by Canadian Government

Individuals and special air services accounted mainly for the purchase of 50 aircraft from the Canadian War Assets Corp. in November. The planes, plus 11 engines and other aircraft materials, brought \$113,281.

Planes disposed of included Harvard trainers, Avions and Cessna C-190s, plus engine transports. This brings to 646 the number of surplus aircraft sold to Canadian purchasers.

### Training to Aid Canadian Operators

New business from the Canadian government will be available to charter and fixed base operators soon as part of the rehabilitation of veterans of the Royal Canadian Air Force.

The Department of Veterans Affairs has arranged with operators, bush airlines and other aviation companies to train RCAF pilots especially for bush air transportation service.

► **Procedure**—Pilots with full flying experience will go as co-pilots with veteran bush pilots until they learn the peculiar skills of flying largely by landmarks over lakes and bush in the sparsely settled sections of the North Woods, flying men and materials in and out of gold mining camps.

War veterans taking this training would be paid under the government's training allowances plan and receive some additional pay from the company until they are regarded competent to handle aircraft alone in the type of operation in which they are training. They would then go on full pay and allowances would stop.



### SPEEDY NEWS COVERAGE:

Using a combination reporter-pilot-photographer, the Dallas Morning News is speeding photographic coverage of events in the largest state in the union. After obtaining his photographs, the cameraman takes off in his plane and flies to Dallas where he drops the exposed negatives in an open area less than a mile from his newspaper's plant. A waiting car rather than to the office.

## Coloradans Propose 25-Mile Carrier

Smallest operations area yet proposed by any air carrier in this country has been requested of Colorado Public Utilities Commission by Harry E. and Mary Smith of Leadville, who have promised to resume flights of a personal non-scheduled air freight, taxi and sight-seeing service to a maximum distance of 25 miles from Leadville. First-equipped aircraft would be used.

While the distances involved are short, the applicants say they will save up to a day or more in freight transit time because of the non-scheduled service.

There are several towns, mills, and villages in the trade area suggested. Leadville is 12,126 ft. above sea level, boasts it is the country's highest incorporated community.

**Equipment**—Mr. Smith, at a hearing, proposed to lease Beechcraft equipment until the service is in a paying basis.  
**One aspect of his service would be to carry fishermen over the 42 lakes in the area, most of which are otherwise inaccessible, except by pack train, skimming his passengers to collect their fishing areas from the air.**

Supplies such as fresh fruit and vegetables would be dropped not only to vacationists but to residents of the area.

## Mail Test Asked in New England

One new airline application filed with the Civil Aeronautics Board for pickup routes in New England asks that "consideration be given to the possibility of carrying all first class mail by air during the winter season on an experimental basis."

Seaside Airways of Springfield, Mass., the petitioner, points out that "this area of the country has severe, prolonged winters when snow often is deep and conditions frequently create excessive delays in surface travel-

ing and at times holds surface travel completely."  
**Argument**—"It is thought that this proposed type of service would greatly facilitate the rapid movement of mail in and out of this area and do so at a cost which would very favorably compare to that of surface travel."

Company claims that expediting of the mail would compensate for any slight increase in cost, and it is even possible that such costs could be held to those of surface travel.

ing a similar service for the past two years.

Great Motors Flying Service, Humberd, Saskatchewan, has applied for a non-scheduled charter commercial air service to operate out of Humberd. And Northern Wings Co. Ltd., Lewis, Que., has applied for a license to operate a non-scheduled charter commercial air service based at Revere Islands, Que., on the north shore of the St. Lawrence River.

## Socoy-Vacuum Using Air Fleet to Speed Work

Representatives of Socoy-Vacuum Co. Co's Aviation Department are utilizing a fleet of aircraft stationed throughout the country to speed sales trips and executive missions.

The fleet comprises Beeches, Puchetta, Cessnas and Mustangs in the E. S. and Lockheeds, Beeches and Tapercrafts based outside this country. They range from two-place to 14-seat cabin models, and from 65-hp. engines to 1500-hp. two-engine types.

The company believes its utilization of the plane-fleet is "ushering in a new era in American business methods," and that it is setting a course that eventually will be followed by all progressive firms. Many of the salesman are combat pilots from the service.

## Utah Line Organized

Incorporation of a new interstate charter service which has "found facilities for 19 years at Ogden, Utah, Robert H. Hurdick Airport, is announced by Western American Airways, Inc. Eugene T. Hanning is president.

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**FRANKLIN** "What Your Town Needs for the Living Air Base, information and a complete system of flying facilities. It will help your community plan its future flying area and for your own safety. Write Dept. A-1212, Piper Aircraft Corporation, Lock Haven, Pa."

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## CANADIAN RESORT AIR BASE

Development of a seaplane base on Lake Muskoka, near Whitby, Ontario, is expected by J. R. Brown, the operator, to attract many vacationing private flyers within the next few years. The main lake, some 11 miles long, is described as ideal for smooth water operation while adjoining bays offer safe anchorage in rough weather. The hanger and dock, above, are in Ten Acres Bay, adjoining the 16-hole Muskoka golf course. Fishing and hunting are other attractions of the Muskoka area.

**PIPER AIRCRAFT CORPORATION  
LOCK HAVEN, PENNA.**

**PIPER CUB**  
Points the Way to Wings for ALL Americans

## Airline Dividends Set Record But Most Income is Retained

Summary for 1945 shows more carriers made payments to stockholders, and in greater dollar volume, than ever before but outlays still were only small fraction of earnings.

Airline dividends for 1945 were the highest on record. More carriers made cash disbursements to stockholders and in greater dollar amount than in any previous year. Increased earnings were primarily responsible. Further, the base for payments has been broadened—the industry has more shares of stock outstanding with the public. Nevertheless, dividend outlays were only a small percentage of earnings and represented nothing more than token payments.

The need for airline capital continues great. Earnings are being "ploughed back" and re-employed in the industry. With war restrictions removed, large scale expansion programs are rapidly being carried forward. New money is finding its way into the industry but the hoarding of earnings continues necessary.

**Summary**—A survey of the field shows the following:

▶ **American** paid \$1 per share during 1945 on its present capital stock. This is equivalent to \$2 per share on the old stock, prior to the 2-for-1 split-up in December, 1944. American has one of the best dividend paying records among the airlines, starting with a \$1 payment on the old common stock in 1940. This rate was increased to \$1.50 through 1943. In 1944, the equivalent of \$2 was paid on the old stock.

▶ **Boeing** paid 80 cents per share for 1945, the same as in 1944. The company has been maintaining a 15-cent quarterly rate since late in 1948 and has indicated its intention of making this disbursement as long as earnings permit.

▶ **Delta** probably has the most interesting record. Traded "over-the-counter," the shares of this company have obtained a broader base of interest in recent years. Dividends were first paid in 1938 and, with but one interruption,

continued every year since. The equivalent of 33 1/2 cents per share on the present stock was paid in 1938. In 1939 and 1940, 36 2/3 cents was paid each year. Deficit operations for 1941 caused a lapse in that year. Dividends resumed in 1942 at the equivalent of 33 1/2 cents and maintained at that rate through 1944. In 1945, 50 cents was paid.

▶ **Eastern** broke its string of non-dividend years by making two 50-cent disbursements during 1945. This line has one of the best earnings records in the industry but from its present incorporation in 1938 until 1945 it failed to pay a single dividend. From the outset, the policy was pursued of retaining all earnings.

▶ **Northwest** has paid 50 cents per share every year since 1945. These payments cover the fiscal year ended June 30. The company's first cash dividend was 50 cents per share on the old stock in 1937.

▶ **TWA** has far shown no inclination toward resuming any dividend payments. In 1936, 25 cents per share was paid and nothing since that time. Despite a better earnings record in recent years, the company is under no compulsion to make any immediate disbursements to its stockholders. The Hushes Tool Co., owning about 40 percent of the total stock, is in need of dividend income. Moreover, the inherent and sinking fund requirements on the recent \$20,000,000 insurance loss will mitigate against any dividend payments in the near future.

▶ **United** has been pursuing a very conservative policy. A total of 50 cents per share was paid on the common stock in 1945, the same as in 1943 and 1944. An total payment of 35 cents per share was made in 1946, the same as in 1945. The company has been maintaining a 15-cent quarterly rate since late in 1948 and has indicated its intention of making this disbursement as long as earnings permit.

1944, United marketed 195,000 shares of 4 1/2 percent cumulative convertible preferred stock. This annual dividend of \$4 1/2 per share has been paid regularly and is in no jeopardy. This stock, however, is rapidly being converted into common with the annual dividend requirement diminishing in the process.

▶ **PCA** broke its blank dividend record by declaring an initial payment of 25 cents per share in August, 1945. The carrier also has an issue of \$10,000,000 in 3 1/2 percent convertible debentures.

▶ **Western** has also retained earnings in preference to declaring dividends. Here, too, a major stockholder, William A. Caulter, owning about 47 percent of the stock, may influence dividend policy. Western paid a cash dividend of 45 cents per share in 1938. In 1939, an additional 25 cents was paid and the dividend record a blank since that time forward.

▶ **Pan American** always has followed the policy of making token dividend payments. The first dividend checks were mailed in 1938 when 40 cents a share was paid on the old common. In 1937, the rate declined to 25 cents a share to be boosted to \$1 for 1938. There were no payments in 1939 and 1940. The \$1 annual rate was resumed in 1941 and continued through 1944. Since the 2-for-1 split-up in 1943, two 25-cent dividends have been declared. The latest one is payable to stockholders at record on December 31, 1945.

▶ **Continental and Chicago & Southern** have made nominal payments in recent years. Their stock has limited public market distribution.

**American Overseas, Calched, National, Northeast and Mid-Central** have, thus far, failed to disburse any cash dividends for 1945 or previous to that time.

No investor or speculator is seriously looked to airline securities as a source of stable dividend income. The greatest attraction of airline shares has always been their capital appreciation possibilities. And on this count, an early investor in airline shares has no regrets.

Realized and unrealized profits from the price rise of air transport stocks have been among the largest seen in the market in recent times. Such gains more than compensate for the lack of consistent dividend income.

## TRANSPORT

### British Deny Easing Attitude On Trans-Atlantic Traffic Split

American interests still are optimistic, however, citing present situation with U. S. operating 14 flights weekly and Britain unable to run more than one despite position latter took at Chicago.

Although some American officials thought last week that they detected a weakening in British opposition to freedom-of-the-air in this country has defied it. British spokesmen in Washington said they have not modified their views on international regulation as expressed at the Chicago aviation conference.

Specifically, British officials described as inaccurate a London report that they have abandoned their position that there should be a 50-50 division of traffic between the United States and the United Kingdom on routes connecting the two countries.

▶ **Situation**—American sources who believe, perhaps optimistically, that Britain may come around to the country's position on freedom-of-the-air make three points:

▶ **Britain**, unable to operate more than one trans-Atlantic flight weekly at present, is allowing the United States to operate 14, peo-

ing negotiation of a bilateral agreement.

▶ **The British position** at Chicago, according to these American sources, implied that at no time should this country operate more trips than Britain was able to operate. Now Britain merely reserves the right as principle to operate as many flights as this country but in practice permits operation of 14 U. S. flights regardless of Britain's inability to match them.

▶ **As the United States signs more and more agreements** containing the Five Freedoms of the Air, British aviation theorists may become increasingly fearful.

▶ **And, finally**, this country has no objection to Britain's reservation of the right to match our number of flights, provided that no unreasonable restriction is placed on the number we may operate. In short as the Five Freedoms in the light for any country to fly as

much as it feels economically justified in doing.

On the British side, however, the present latitude granted to America in the matter of number of flights is stressed as a working arrangement pending a formal agreement. The British spokesmen have their 25-passenger Tudor in operation early next year. Then, when a formal agreement will be negotiated, the British will want provisions included that there shall be traffic quotas based on traffic authorized. They concede that ultimately this will mean British carriage of 50 percent of the total traffic between the United Kingdom and America.

▶ **American View**—Although American officials dislike quotas, and so to see how they can be established, maintain as passengers travel is not predictable, they concede some such arrangement may have to be made with Britain. If it is, they are bent on preventing the application this system to our relations with other nations. And, as the British case, Americans will insist if quotas are inevitable that they provide for expansion.

The British are more or less noncommittal on the Fifth Freedom, except that they give no indication that their opposition to it has altered much, if any. For the moment they contend America does not need Fifth Freedom traffic in Britain. They say our planes passing through Britain to Europe and Scandinavia will be filled with through passengers and therefore the question of picking up traffic in Britain will not arise soon.

▶ **Notes**—The British still are hope-



AIR QUE, HEATH ROW:

Heath Row Airfield, London's new terminal airport for international air traffic, is shown here as it seems completed. Hopes are that it will be ready by next summer. One of the largest in the world, with

runways of 3,375 yds or more, the field will have a permanent fog dispersal (FUD) installation. The field, about 15 miles from Hyde Park Corner, is at Stevenage, Middlesex.

# BRANIFF AIRWAYS— Oklahoma Acorn to International Oak



Braniff Airways operations building at Love Field, Dallas, Texas

People who talk about the pioneer days being over and the lack of new fields for conquest don't know Tom Braniff and the Braniff legend.

For one of the characteristics of Braniff Airways has been that it has always kept its eyes on the ever-expanding horizons of aviation.

Starting with one plane, three employees, and a 116 mile route from Oklahoma City to Tulsa, Braniff has become one of the leading air carriers of the country—3,749 miles of domestic routes, flying 28,000 miles daily, and

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And now, the ever-busy little Oklahoma airline points toward becoming an important factor in International aviation.

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T. E. Braniff, President of Braniff Airways, and one of the great pioneers of domestic airline operation.



fuel that some airlines are unable to be written into the formal agreement when it is negotiated.

In this regard, however, American sources point anew to the legislative impediments hampering them in any discussion of rates.

The Civil Aeronautics Board has not, at this writing, acted on the International Air Transport Association traffic conference agreement. If that is approved, the American carriers will be exempt from the anti-trust laws as far as participation in the traffic conference is concerned. But they still will have to have approval of the CAB on any rate agreement thereafter. If specific rate agreements are approved by the Board, the carriers become immune from the anti-trust laws in that respect.

► **Possible Block-**During consideration of the general IATA agreement or of rate agreements by the Board, the Justice Department may step in and present its views prior to approval or disapproval. Thus far, the Justice Department has not intervened in the CAB's consideration of the general agreement.

Aside from its duty to approve or disapprove rate agreements, the Board's authority over rates charged by U. S. lines in international operation is limited to the prevention of discrimination. Serious thought is being given by high CAB officials to the advisability of asking Congress for a broader grant of authority. The Civil Aeronautics Act of 1938, in 1947, contained a section directing the then Civil Aeronautics Authority to study and report to Congress within a year on what further regulation was necessary.

► **Indirect Influence**—What influence the Board now has over rates in this field must be exercised indirectly, through its power to accept or reject rate agreements, through determination of "fair competition," or—even more remotely—through the authority it does have to determine air mail rates, which in turn have an obvious effect on the economics of a given operation.

But in disapproving a rate agreement, the Board cannot order a rate it deems correct, as it can do to the thousandth of a cent in the U. S. Nor can it set a rate without measurements and maximums, as it can do in domestic overseas operations.

► **British Confidence**—The British, appreciating this limitation, are confident that IATA will agree on

## Postage Cut Urged

Reduction of the annual rate from 8 to 6 cents an ounce and need for a 3-cent annual post cost have been urged by Rep. Harold C. Hagen (R., Minn.).

Speaking on the House floor in support of two bills he has introduced, Hagen quoted Postmaster General Robert E. Heston as favoring the 3-cent rate and having promised to work for its adoption. He stressed that the reduction would be a decrease of only 1 cent from the 6-cent rate slated for retroactive six months after the end of the year.

► **With air mail** postage rates showing an increase of more than 40 percent for the fiscal year ending June 30, 1948, according to the American Board reports, Hagen said, "There seems little doubt that a much greater profit will accrue to airmail when the proposed report appears for this fiscal year. If the 6-cent rate is restored, the profit from airmail will still show a substantial profit."

rates acceptable to the Board, but at the same time are willing to abide by any possible Board decision to disapprove a rate agreement.

Nevertheless, they and the French are awaiting Board action on the general IATA agreement before entering a final interim arrangement as to frequency of trips.

## Survey of Airport Sites

### In Toledo Area Launched

The Toledo, Ohio, City-County Planning Commission has retained the airport division of Giffels & Valle, Inc., Detroit engineering firm, to study and recommend location and types of airport facilities within a 35-mile radius of the city.

The survey is to be made with an eye to the "Toledo Tomorrow" redemonstration plan prepared by the Toledo Board and recently given wide-spread publicity. This plan called for a downtown air, rail and bus terminal.

► **Scope**—The study will cover facilities for all types of air traffic, including personal planes, lease operators, air lines passenger traffic and air cargo. It is the belief that the company has undertaken, and is similar to one made for Cincinnati.

## Regional Meetings Of PICAO Set

Preparations for forthcoming regional meetings on air navigation facilities, requested recently by the Interim Council of the Professional International Civil Aviation Organization, are under way.

Dr. Edward P. Warner, council president, has gone to Dublin, Ireland, for discussions on the North Atlantic regional meeting. He also is to visit London and Paris to discuss regional organizations with aviation authorities there.

► **Called**—Dr. Albert Roper, PICAO secretary-general, later announced the North Atlantic meeting has been scheduled to be convened in Dublin on March 4. The European-Mediterranean meeting will be held in Paris late in March or April, he said, and the Middle East meeting in Cairo soon after.

Other PICAO developments included arrival in Montreal of Guillermo Gonzalez, Mexico's delegate, completing present official membership of the council, and anticipation of early release of the final report of the communications division.

## Fare, Frequency Problems

### Delay TWA Ocean Service

Pure and tight frequency problems, unsettled pending agreement with Pan Am, have combined with delays in delivery of equipment to make inauguration of trans-Atlantic commercial air service by TWA impossible before the middle of next month.

Operations originally were scheduled to begin about Dec. 23, but delay until the first of the year at least was announced following return to Washington of the record-shattering "peerless flight" of TWA's "hen fly" Chet! "Current conditions are that regular service will start with two or three trips per week, to be stepped up probably in February or March."

► **Records**—The "peerless flight" of TWA's Lockheed Constellation will set commercial flying time records: Washington to Paris, 12 hrs 57 min.; Glasgow, Newfoundland, to Shannon, Ire., 6 hrs 57 min., breaking the 6 hrs 56 min record by the same carrier on its shrewdest flight; Washington to Ireland, 10 hrs 56 min.; Shannon to Glasgow, 7 hrs. 35 min. and Glasgow to Washington, 5 hrs. 53 min.

# HERE'S WHY YOU SHOULD SEND YOUR OVERHAUL AND RECONVERSION TO US!...

*Western Air Lines, Inc.*

P. O. BOX 391, DUBBUKE, CALIFORNIA  
September 26, 1945

Major C. C. Moseley  
Grand Central Airport Company  
Glendale, California

Dear Sir:

I wish to take this opportunity to advise you of a circumstance which, in my opinion, is remarkable.

The last airplane which was reconverted for Western by Grand Central Airport Company was pushed out of the hangar about 10:00 o'clock in the morning and was placed in scheduled service with passengers, mail, and express in the middle of the afternoon of the same day. This particular aircraft had on hour and one-half of flight test after major overhaul and conversion from Army type C-53 to DC-3. This involved substantial structural repairs, skin repairs, revision of floor beams, and many other major items including complete airline radio installation.

Your supervisors and other personnel should be commended very highly for the meticulous quality of their workmanship.

We have expectations of being allocated several C-53's for reconversion and you can rest assured that the work will be performed by your splendid organization.

Very truly yours,

*Charlie M. Jones*  
Charlie M. Jones  
Vice President-Operations



WE CAN do the same "meticulous quality" of workmanship for you that we are proud to have accomplished for Western Air Lines...We have operated "on merit alone" as an approved C.A.A. repair station (No. 73) since 1929...We are an authorized and approved Douglas repair station...We believe we have the finest shops for airplane and engine overhaul and repair in the United States...Western Air Lines' splendid letter speaks for the quality of our workmanship...We have reconverted a large number of

LOCKHEEDS for the U. S. Navy and private owners...We are also in the fortunate position of having a large group of highly skilled personnel, many with 10 to 28 years' experience in aviation. Many of these men have been with this company more than 10 years... WE HAVE THE EXPERIENCE...THERE IS NO SUBSTITUTE FOR IT ...Send your work here if you want the best at reasonable cost.

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## Pogue Won't Quit 'For Time Being'

CAB and air transport industry, relieved as he is acclimated to President's request to remain.

By MERLE NICKEL

Decision of Chairman L. Welch Pogue to remain on the Civil Aeronautics Board "for the time being" at the behest of President Truman has brought relief to both CAB officials and the air transport industry.

Pogue's letter does not expire until Dec. 31, 1947, but he had told friends he wished to resign at the end of next February to return to private practice. He was appointed to the Board Jan. 10, 1942, by President Roosevelt, and four days later became chairman.

**Possible Successors**—How long he will remain after next March 1 is uncertain, but it probably will not be more than a few months. Who his successor will be also is problematical, but friends say Mr. Truman's request that he remain with the Board a leadable indication by an ex-membered president to make a careful selection of a successor. Pogue is one of the most highly respected men in government aviation circles.

Three names—those of S. Paul Johnston, Clarence Young and Col. Francis Butler—are among those most frequently mentioned as possible Board appointees. Pogue's resignation will be the second. Edward P. Warner, former CAB vice chairman, having resigned to become president of the International Council of the Provisional International Civil Aviation Organization at Montreal.

**Qualifications**—All three men mentioned as successors are regarded in the industry as competent aviation men.

Johnston returned to this country in mid-December from Navy duty abroad. Formerly with the Naval Air Transport Service in Hawaii, he was reassigned to direct the work of the Strategic Bombing Survey in Europe, and later went to Japan on a similar mission. Earlier he was coordinator of research for the National Advisory Committee for Aeronautics, whence he joined Civil Aeronautics as executive Washington representative. He was one of the designers of the C-46 Commando.

Young, like Pogue a native Iowa, is former head of Pan American's Trans-Pacific Division,

## C. & S. Orders 202's

Purchase of 12 Martin 202's by Chicago & Southern Air Lines for \$1,400,000 was announced last week by Carleton Parsons, president. The contract brings contracts for these ships held by Glenn L. Martin Co. to 122 units at a total price of \$14,430,000.

C & S is to receive delivery in 1947. The twin-engine transports are the same type as those recently ordered by PCA, Colonial and Eastern.

a position he resigned recently, reportedly after disagreement with company policy. He was director of aeronautics in the Commerce Department from 1928 to 1930, and assistant secretary of Commerce for Aeronautics from 1930 to 1933, leaving to join Pan American Airways in 1934.

Butler, a former attorney for Mechanics Airlines, directed wartime controls over the national air service pattern until the Army relinquished that duty March 1, 1944. His last task over the functions of the military director of civil aviation.

## Postal Officials Stated

### For Grilling on Funds

Post Office Department officials, seeking Congressional appropriations for current contracts on international routes, will be put through stiff questioning by members of the House Appropriations Committee during hearings on the 1947 fiscal year appropriation bill next week.

This was indicated at preview hearings held recently. Postmaster General Hannegan and other Department officials appeared before the Post Office subcommittee to outline, in general, the Post Office requirements for the coming fiscal year.

**Costs Cited**—It is reported that Post Office spokesmen informed the subcommittee that two contracts would be made for carrying airmail over the North Atlantic route, with Pan American Airways and Transcontinental & Western Air.

Industry-minded members of the committee, of both parties, are eyeing airline profits during the past three years, and are set on turning down money for airmail contracts which would result in a loss operation for the government.

## TWA Seen Ready To Drop Boston

Suspension of service by TWA at Boston's Logan Airport may be in the offing. This is the belief of some observers following TWA's filing formal opposition with the Massachusetts Department of Public Works to the application of Ratchford Storage & Warehouse Co. for exclusive right to use the airport ways and roads and handle all transportation within the field limits.

The TWA statement, outgrowth of the ground service controversy currently raging at Boston (AVIATION NEWS, Dec. 17), said:

**Responsibility**—"TWA does not intend, nor can it afford, to relinquish its responsibility to operate safely its own ground service equipment," and added that "the responsibility for safety cannot be delegated as a concession either on the ground or in the air."

Opposition to Ratchford's application also has come from L. A. Gov. Robert T. Bradford.

**Threat**—"To give any one company a monopoly over all forms of ground transportation at Logan Field, or to force all others to do business through one agency," he said, "would choke progress and stifle competition. Such a franchise would be an unwarranted and highly serious interference with the public interest."

## CAB, WAI Answer Suit

The Civil Aeronautics Board and Western Air Lines took issue last week with United Air Lines' argument that the Board's decision regarding the Denver-Los Angeles route to Western was arbitrary and ambiguous. As respondents in United's appeal of the decision to the U. S. Court of Appeals in the District of Columbia, they filed briefs in answer to that submitted earlier by United (AVIATION NEWS, Nov. 18).

## Produce Price Ruling

Tomatoes shipped by air in wholesale-size packages may have a higher ceiling price than those sent by rail, under an OPA amendment effective last week. Each tomato so shipped may be wrapped in a transparent, non-reusable wrapper marked to show the method of shipment. OPA previously required that air-shipped tomatoes had to be packed in consumer size packages.

## Martin Reconversion Contracts Heavy

Remodelling of C-54's for nine lines could cost \$15,000,000; nearly 3,000 workers needed

C-54 conversion contracts between Glenn L. Martin Co. and seven domestic and two foreign airlines now run between \$15,000,000 and \$10,000,000—a tally to rise until the firm reaches active production of the Martin 302 in January, 1947.

The conversion job has caused the recall of nearly 3,000 Martin employees furloughed after V-J Day. Chances are they will stay on to work on the 302, of which 40 a month are to be produced for the first six months of 1947, and 80 a month thereafter under orders in prospect.

**Contracts**—Martin lists contracts for nine airlines for C-54 conversions. These are PCA, TWA, Eastern, Pan American, Northwest (not Northeast, as Martin previously announced), Braniff, Chicago & Southern, Dole, one of largest carriers in the Argentine, and Caserio de Sal, largest Brazilian airline. These are definite contracts.

Other commitments expected to fall in the same category bring the total to 14 Martin jobs but has not broken down these contracts by number of planes. A spokesman says the picture changes so rapidly from day to day that to do so would be almost impossible.

Thus far there have been no definite orders for reconversion to sleeper planes, though Pan American has been thinking of fitting about 16 of its C-54's in this way. First of the converted jobs is due for delivery this month, about the time Western is to receive the first new DC-4 off the Douglas line at Santa Monica.

## PCA Reported Studying

### Cargo Work with C-54's

Allocation of 52 additional surplus four-engine transports was announced last week by the Section Property Administration, 10 domestic airlines getting 43 and one foreign applicant six.

Pennsylvania-Central Airlines, recipient of five more basic C-54's, is reported to be studying use of some of the equipment for non-scheduled contract freight work. The move would place PCA in a



**C-54 Conversion Possibilities:** Possible interior arrangements for the Douglas C-54 as sketched by a Glenn L. Martin Co. artist. Top to bottom: seats installed for day accommodations, some layout arranged for sleeping quarters, and a lounge. Thus far Martin is making no conversion to sleeper planes, although such a step is being considered by Pan American.

field already entered by American Airlines.

**Other C-54s**—Transportation in the 32nd allocation: C-54's—Pan American, Northwest and China National

Airways Corp., six each; United, American, TWA and Eastern, five each; Delta, three; Western, two; Braniff, one. Three C-54's went to John C. Knipp & Sons.

## Third Overseas Deal Announced by TWA

Acquisition of 28 percent interest in Philippine Air Lines follows Hawaiian and TACA investments.

Last week's disclosure by Transcontinental & Western Air that it is acquiring 38 percent interest in the reorganized Philippine Air Lines marks the carrier's third investment in an air operation outside continental U. S. in a little over two years.

A year ago last spring, TWA announced that it had purchased a 32 percent interest in Hawaiian Airlines, Ltd., for between \$300,000 and \$400,000 (AVIATION News, May 8, 1944). Six months after the company bought, for \$1,250,000, a substantial interest in TACA (AVIATION News, Oct. 13, 1945).

Officials—While the largest single stockholder in the Philippine Corporation is the National Development Co., agency of the Philippine Commonwealth, TWA will provide the line with technical personnel and assistance, and make its own facilities available for training. Arthur Stewart of Los Angeles, TWA's western traffic manager, is vice-president of the Philippine company. Col. P. I. Gunn, in aviation more than 20 years and, ac-

ording to TWA, "one of the best known flyers in the Far East," returns as operations manager.

C-47 Purchases—Not long ago the reorganized Philippine company, which suspended commercial service over its routes at the time of Pearl Harbor and turned over its equipment and personnel for U. S. military use, bought five C-47's, for \$150,000, from the office of the Foreign Liquidation Commissioner at Manila. These are being converted in the carrier's shops in that city, with the outlook for resumption of service "in the near future," according to President Jack Faye of TWA. The service is expected to assist the Philippine Government in resuming interrupted functions.

Headed TWA and the National Development Co., other major stockholders include Col. Andres Bonifacio, former Minister of Finance in the Philippine Government; Kimble & Co., and the De la Roca Steamship Co.

Operations—The Philippine line started carrying passengers, mail and cargo in 1944, over 400 miles from Manila to Baguio, Manila to Cebu via intermediate points, and Lepanto to Cebu. The war prevented planned route expansion, but prospects are that when development of the system is completed, it will cover the islands with a 3,900-mile route network from Luzon to Mindanao.

## CAB Offers Change In Dispatcher License

Requests of returning veterans for consideration of aeronautical experience acquired in military air transport service has led CAB to propose amendment to requirements for issuance of aircraft dispatcher licenses.

The amendment in Sec. 21.15 of the Civil Air Regulations, now being circulated for comment, would require aeronautical experience to be gained within two of the instances previously provided three years before application for a certificate can be made. In addition to passing necessary examinations, applicants must serve in connection with dispatching of scheduled air carrier aircraft under a certificated dispatcher for at least 90 days at the six months prior to application.

The proposed amendment, identical with suggested international standards for dispatchers, will be presented as the American viewpoint on the subject at next month's international conference.

## Carmichael Appointed PCA Executive Vice-President

Promotion of James H. (Slim) Carmichael to the position of executive vice-president of PCA was announced last week by C. Bedford Moore, the line's president, after a board of director's meeting. Carmichael has been vice-president in charge of operations. His successor was not disclosed.

Carmichael, 38, has been a PCA vice-president since 1944. Recently he headed a commission of five technical men chosen from the industry to go to Germany to gather aviation information.

## 24 of 37 Dutch Fields Will Be Continued

The Netherlands has announced it will continue to operate at civil and military fields 24 of the 37 airports in existence in the country at the end of the war.

Principal Netherlands airport is at Schiphol Aerodrome, outside Amsterdam. The field at Duxton, north of Amsterdam, will become an alternate for use when Schiphol weather conditions make landings there impossible. Other airports for civil use only are Rotterdam, Vlieland (Friesland), the Zeeland-Financiers field, Breda, Hilversum, Tegel, Biele and Yperling.

## Study of Air Cargo Launched by ATA

Forerunner of a long-range program for handling greater quantities of air cargo and effecting uniformity in tariff regulations covering varied airborne articles is the creation of a Shipping Research Division by the 23 airline members of the Air Transport Association.

The new independent division, approved recently by ATA's board of directors, will be put in operation soon after the first of the year with an experienced chairman as director. ATA, meanwhile, has made tentative arrangements with an independent laboratory to conduct experiments for the program.

Alfred C. Work of the division will be charged with policy for definitions and collection for all phases of air transport of hazardous materials, study of physical properties of all materials and effect on them of conditions encountered in air transport, such as pressure, temperature changes, study of packaging of all hazardous materials and classification of hazards into inflammable, magnetic and radio-active and toxic, noxious and corrosive items-producing types.

Initial objectives of the division will be to promote safety in flight; protect air shippers by reducing possibility of loss and damage; and give transport operators a clearing house for technical information to help promote safe, fast delivery of airborne commodities.

Further aim is to produce findings that will enable the airlines to lower air cargo rates under present levels.

## Financial Officials Urge Joint Service

Consolidation of facilities and equipment of airlines at their terminals over the country, as a factor in further reductions in fares, was advocated at a two-day meeting of the Airline Finance and Accounting Conference at Dallas.

The conference also discussed new methods of cooperative finance and the necessity of financing purchase of new aircraft fleets, personnel, training of supervisory personnel, taxes, and internal auditing.

Officers—Officers elected for 1946 are T. F. Armstrong of Eastern,

## Joint Freight Firm Discussed

Formation by the airlines of a joint company to handle air cargo as a consigned, non-scheduled basis is being discussed by officials of several of the major carriers. American, Eastern and United are reported to be considering such a move, which presumably would be presented to CAB for approval on the ground that it would permit sharp reduction in freight rates. American already is engaged in non-scheduled contract carrying in addition to its regular interstate scheduled operations.

Officials also are vying on whether only the larger airlines would participate in a joint company or whether all domestic air-

lines would be given a share, but the latter seemed more likely. Equipment probably would be interchanged, although pilots would not, with each airline operating its plane-load assigned from the East to the West Coast, for instance, might be piloted by crews from different lines although it crossed the country in one ship.

Leading credence to the report was the fact that although Air Cargo, Inc., has been organized, its corporate name has been protected and still exists. Air Cargo was formed several years ago by Eastern, American, TWA and United, as an agency to study transportation of freight by air. Other lines joined later.

## PAA Daily London Flights Highlight Service Changes

Pan American Airways' inauguration of daily flights to London to fill its present quota of seven a week under a recent CAB order based on the agreement with the United Kingdom, highlights service changes recently reported to the Board. The daily schedule becomes effective Jan. 1.

Other changes announced: Chicago & Southern—Adding two round-trips daily between Chicago and St. Louis and increasing another flight into Chicago from Memphis, effective Jan. 1. Eastern—Added one round-trip daily between Detroit and Miami, bringing total to three.

PAA—Added one round-trip cargo and mail only, as Tuesdays and Fridays between San Francisco and Honolulu with DC-4 equipment, effective Dec. 18.

PAA—Resuming service to Newark, effective Jan. 1.

Operating Revenue Increase

Net operating revenue of the 19 domestic air carriers totaled \$21,099,011 for the first eight months of 1945, a 10 percent increase over 1944. This was an increase of \$7,881,714 over the same period last year. Operating expenses for the period were \$20,439,105, compared with \$19,794,771 for the first eight months of 1944.



EAL TRAFFIC MEN DISCUSS PLANS:

First meeting of the Northern Division of Eastern Air Lines men Robert L. Turner, formerly with the Air Transport Command, became district manager, was held at New York City. Turner discussed the outlook for air travel development and increase in air passenger traffic. Turner and the district and city managers who met with him are, left to right, J. P. Farrell, New York, district manager, John M. Lyons, Boston, New England district manager; Herman Kapp, Washington, district manager; Turner, Ralph Piment, Richmond, Va., city manager; J. W. Abbott, Baltimore, city manager; Alex L. Hart, New York, assistant director of research and planning; E. J. Pasche, Philadelphia, city manager.





# Salt Lake City

## model airport



Thompson Flying Service, one of the country's oldest, was founded in 1925 by the famous Alexander Raymond (Tommy) Thompson. It was among the first to start Civil Pilot Training and War Training Service, and has instructed hundreds of Army and Navy fliers. Its school is now approved to give ground and flight training to returned veterans.



Friend of fliers everywhere, Carl H. Hellberg has made Salt Lake City a popular rendezvous of private plane operators from all over the country. A certified flight and ground instructor, Hellberg taught Army and Navy classes during the war and, as Civil Air Patrol Captain, acted as Utah Wing Operations Officer. He started with Thompson Flying Service at its inception and has managed the Company for the last 4 years.



**A**LL pilots know the time- and temper-saving value of airport service that is prompt and reliable, convenient and friendly . . . and frequently fly out of their way to get it.

Salt Lake Airport No. 1 is a model for that kind of service. Carl Hellberg, manager of Salt Lake City's Thompson Flying Service, and a commercial pilot himself, knows what the flier wants—and sees that he gets it. Thompson Flying Service facilities include everything from quick refueling, weather reports, and clearance, to complete overhaul. The company maintains the largest parts depot and is one of the approved repair stations in the Rocky Mountain area.

For any airport to build acceptance among fliers, dependable service must be backed by dependable products. This is particularly true of lubricants and fuels. It is significant, therefore, that Thompson Flying Serv-

ice has since its inception twenty years ago, favored *Texaco Aviation Gasoline* and *Texaco Aircraft Engine Oil*. Texaco products are favorites, too, at other progressive airports all over the country, and with leading airlines. In fact —

*More revenue airline miles in the U. S. are flown with Texaco than with any other brand.* You'll find the choice of the nation's great airlines and airports your surest guide in buying aviation lubricants and fuel.

Ask to see a Texaco aviation representative. He will gladly help you, wherever located, to pick the right lubricants and fuel, and can often suggest improvements in maintenance practices. Texaco Aviation Products are available through more than 2300 Texaco distributing plants in the 48 States. The Texas Company, Aviation Division, 135 E. 42nd St., New York 17, N. Y.



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